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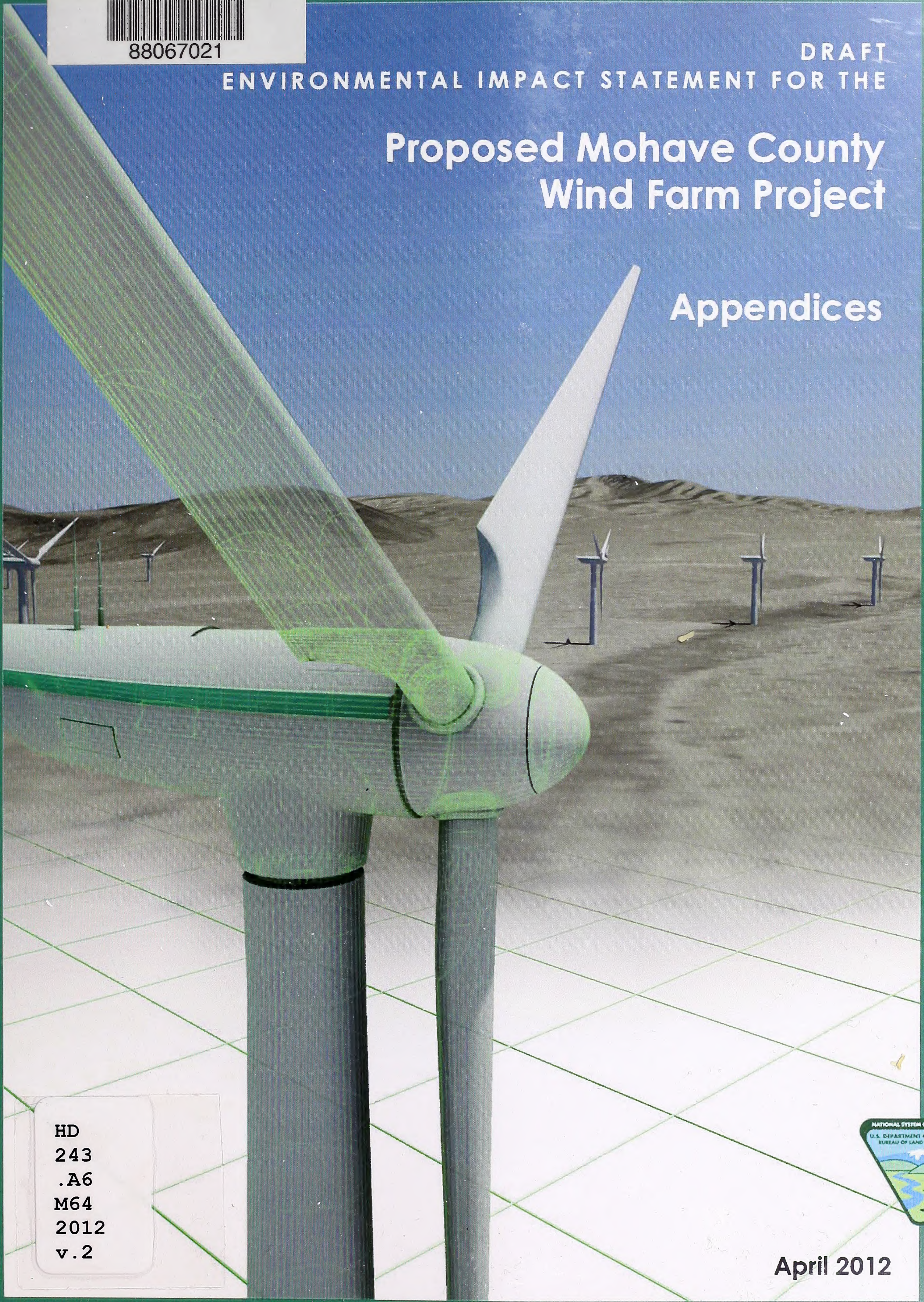
ENVIRONMENTAL IMPACT STATEMENT FOR THE

Proposed Mohave County Wind Farm Project

Appendices



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Kingman Field Office / Arizona

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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APPENDIX A

BLM KINGMAN RMP CONFORMANCE REVIEW

BP WHITE HILLS WIND PROJECT
RMP CONFORMANCE REVIEW
May 18, 2009

Reference NEPA Handbook H-1790-1.5

Wind energy development was not disallowed or addressed in the plan.

NEPA guidance states "If the LUP is silent about an activity, review the plan direction including the broad and programmatic goals and objectives. In this evaluation, there are four possible conclusions:

1. The activity contributes to meeting plan goals and objectives and is not inconsistent with the plan, and hence it can be considered to be in conformance;
2. The proposal is not in conformance, but the proposal can be modified to be in conformance;
3. The proposal is not in conformance, but amendment of the LUP is warranted to allow the activity;
4. The proposal is not in conformance, and the proposal does not warrant further consideration through an LUP amendment."

It has been determined that Conclusion Number 1 above applies to the BP Wind Energy Proposal based on the following:

RMP Resource Area Goals

The proposed BP Wind Project is consistent with the following goal as stated on page 17 of the RMP:

> "Manage public lands in a manner that recognizes the nation's need for domestic sources of energy, minerals, livestock, wildlife, recreation opportunities and other products from the public lands and the importance of these resources to local and regional economies."

RMP Management Guidance

The proposed BP Wind Project is consistent with the following management guidance regarding Land Use Authorizations as stated on page 21 of the RMP:

> "Land use authorizations (rights-of-way, leases, permits) will continue to be issued on a case-by-case basis and in accordance with the approved Resource Management Plan. Rights-of-way will be issued within existing right-of-way routes, including joint use, whenever possible."

RMP Conflicts

The BP Wind Project would conflict with RMP Decision LR13 which states:

> "Major transmission facilities will be restricted to the eleven corridors listed on page 66, where practical. The powerline corridors are restricted to aerial rights-of-way. All other corridors are restricted to buried rights-of-way, with the exception of Highway 93 and Interstate 40, which may be used for both."

A portion of the application includes land within the Mead-Phoenix one mile wide power transmission line corridor. This conflicts with RMP Management Guidance regarding Utility Corridors as stated on page 21 of the RMP:

> "All major utility systems are required to route their systems through the designated corridors under the approved Resource Management Plan. This requirement will prevent the proliferation of major utility systems across public lands and will reduce adverse environmental impacts to sensitive resources."

The intent of establishing corridors was to provide for long distance infrastructure needs, prevent proliferation of major utility systems across public lands and to reduce adverse environmental impacts to sensitive resources. Turbine development would not be authorized within the corridor as it would be inconsistent with the intended purpose of the corridor. The land within the corridor should be voluntarily withdrawn from the application.

Power Transmission Line

Another component of the BP Wind Project is the need for a power transmission line to tie into the national grid. This action would be in conformance with the following RMP decision LR13a (page 66-67) which states:

> "All other minor rights-of-way would be evaluated through the environmental review process and granted or rejected on a case by case basis. Existing rights-of-way would be used when possible to minimize surface disturbance."

This decision has been interpreted to apply to not only minor rights-of-way but would also apply to short transmission facilities, such as grid tie-in transmission lines.

Land Use

The public lands included in the BP Wind Project Area are generally used for grazing, dispersed recreation, rights-of-way, mineral development, and wildlife habitat. The RMP designated the land in the project area for long-term retention and no changes in land tenure will result from the proposed action. While this project may create impacts to other public land uses, the uses would continue to exist and be authorized. Impacts will be analyzed in the proposed Environmental Impact Statement.

CONCLUSION

The BP Wind Project is in conformance with the Kingman RMP and no LUP amendment is needed.

In order to assure continued compliance with the Kingman RMP, the proponent would need to take the following RMP goals and decisions into consideration during project development:

Goals (Page 17 and 18)

Manage public lands and resources under the concept of multiple use to attain the optimum combination of uses.

Manage to balance the use and conservation of renewable resources to provide sustained productivity.

Provide special management emphasis in areas with unique features or special management needs.

Manage cultural resources to maintain and enhance their scientific and public use values.

Maintain cooperative relationships and programs with public land users, interest groups and other government agencies.

Manage for diverse recreation opportunities for the increasing number of visitors to public lands.

Maintain and enhance wildlife habitat to ensure viable populations and natural diversity.

Manage public land resources in consultation with adjacent federal or state management agencies to avoid unnecessary adverse impacts.

Rehabilitate all surface disturbances to the extent practicable at the end of use to protect soil, vegetation, water and other environmental values and to blend the disturbed site into surrounding terrain and settings.

Use special stipulations where applicable and prudent to minimize long-term impacts to the visual quality of sensitive landscape characteristics.

Maintain/enhance the existing visual quality.

Decisions

CL01 Protect the scientific information potential of sites, enhance the public use values of sites and manage sites for conservation (Page 74).

HM03 Reduce hazards to the public and natural resources on public lands from toxic materials (Page 86).

RR16 Provide outdoor recreation opportunities for the public while continuing the BLM policy of providing dispersed and backcountry recreation (Page 75).

RR17 Recreation sites, interpretive sites, trails and roads will be maintained and developed where needed to enhance recreation opportunities and allow public use (Page 26).

RR25 Allow off-road use by authorized public land users that hold a permit or license in areas where vehicles are limited to existing roads, trails and navigable washes and in areas not designated as ACECs or wilderness, if such travel is required to fulfill their license or permit. (Page 79)

RR27 Require prior BLM approval for any off-road vehicle travel in areas where vehicles are limited to designated roads, trails and navigable washes. (Page 79)

TE03 BLM will manage for conservation of candidate and BLM-sensitive species and their habitats. BLM will ensure that actions authorized will not contribute to the need to list any of these species as threatened or endangered. (Page 29)

VP 06 Require that all plants disturbed during land clearing operations be salvaged. (Page 558) (focus on cactus, yucca, ocotillo)

VR01 Designate and manage visual resources according to the Visual Resource Management Classes as shown on Map 19, page 81 and Table 16, page 138.

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APPENDIX B

BLM WIND ENERGY DEVELOPMENT PROGRAM POLICIES AND BEST MANAGEMENT PRACTICES (BMPS)

APPENDIX B

BLM WIND ENERGY DEVELOPMENT PROGRAM POLICIES AND BEST MANAGEMENT PRACTICES (BMPS)

The BLM's Wind Energy Development Program will establish a number of policies and BMPs, provided below, regarding the development of wind energy resources on BLM-administered public lands. The policies and BMPs will be applicable to all wind energy development projects on BLM-administered public lands. The policies address the administration of wind energy development activities, and the BMPs identify required mitigation measures that would need to be incorporated into project-specific Plans of Development (PODs) and right-of-way (ROW) authorization stipulations. Additional mitigation measures will be applied to individual projects, in the form of stipulations in the ROW authorization as appropriate, to address site-specific and species-specific issues.

These policies and BMPs were formulated through preparation of the Final Wind Energy PEIS (BLM 2005). The PEIS included detailed, comprehensive analysis of the potential impacts of wind energy development and relevant mitigation measures; reviews of existing, relevant mitigation guidance; and reviews of comments received during scoping and public review of the Draft PEIS.

B.1 Policies

- The BLM will not issue ROW authorizations for wind energy development on lands on which wind energy development is incompatible with specific resource values. Lands that will be excluded from wind energy site monitoring and testing and development include designated areas that are part of the National Landscape Conservation System (NLCS) (e.g., Wilderness Areas, Wilderness Study Areas, National Monuments, NCAs,[1] Wild and Scenic Rivers, and National Historic and Scenic Trails) and Areas of Critical Environmental Concern (ACECs).[2] Additional areas of land may be excluded from wind energy development on the basis of findings of resource impacts that cannot be mitigated and/or conflict with existing and planned multiple-use activities or land use plans.

- To the extent possible, wind energy projects shall be developed in a manner that will not prevent other land uses, including minerals extraction, livestock grazing, recreational use, and other ROW uses.

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[1] Wind energy development is permitted in one NCA, the California Desert Conservation Area (CDCA), in accordance with the provisions of the *California Desert Conservation Area Plan 1980, as Amended* (BLM 1999).

[2] Although the MPDS developed for this PEIS (Section 2.2.1 and Appendix B) did not exclude all of these lands at the screening level, they will be excluded from wind energy development.

- Entities seeking to develop a wind energy project on BLM-administered lands shall consult with appropriate federal, state, and local agencies regarding specific projects as early in the planning process as appropriate to ensure that all potential construction, operation, and decommissioning issues and concerns are identified and adequately addressed.

- The BLM will initiate government-to-government consultation with Indian Tribal governments whose interests might be directly and substantially affected by activities on BLM-administered lands as early in the planning process as appropriate to ensure that construction, operation, and decommissioning issues and concerns are identified and adequately addressed. Implementation of the policies would include coordination with Reclamation on activities including but not limited to Section 106 of the National Historic Preservation Act as appropriate. Many of the BMPs would also be incorporated into Reclamation's Use Authorization(s).

- Entities seeking to develop a wind energy project on BLM-administered lands, in conjunction with BLM Washington Office (WO) and Field Office (FO) staff, shall consult with the U.S. Department of Defense (DoD) regarding the location of wind power projects and turbine siting as early in the planning process as appropriate. This consultation shall occur concurrently at both the installation/field level and the Pentagon/BLM WO level. An interagency protocol agreement is being developed to establish a consultation process and to identify the scope of issues for consultation. Lands withdrawn for military purposes are under the administrative jurisdiction of the DoD or a military service and are not available for issuance of wind energy authorizations by the BLM.

- The BLM will consult with the U.S. Fish and Wildlife Service (USFWS) as required by Section 7 of the Endangered Species Act of 1973 (ESA). The specific consultation requirements will be determined on a project-by-project basis. Implementation of the policies would include coordination with Reclamation on activities including but not limited to Section 7 of the Endangered Species Act as appropriate. Many of the BMPs would also be incorporated into Reclamation's Use Authorization(s).

- The BLM will consult with the State Historic Preservation Office (SHPO) as required by Section 106 of the National Historic Preservation Act of 1966 (NHPA). The specific consultation requirements will be determined on a project-by-project basis. If programmatic Section 106 consultations have been conducted and are adequate to cover a proposed project, additional consultation may not be needed.

- Existing land use plans will be amended, as appropriate, to (1) adopt provisions of the BLM's Wind Energy Development Program, (2) identify land considered to be available for wind energy development, and (3) identify land that will not be available for wind energy development.

- The level of environmental analysis to be required under NEPA for individual wind power projects will be determined at the FO level. For many projects, it may be determined that a tiered environmental assessment (EA) is appropriate in lieu of an EIS. To the extent that the PEIS addresses anticipated issues and concerns associated with an individual project, including potential cumulative impacts, the BLM will tier off of the decisions embedded in the PEIS and limit the scope of additional project-specific NEPA analyses. The site-specific NEPA analyses will include analyses of project site configuration and micrositing considerations, monitoring program requirements, and appropriate mitigation measures. In particular, the mitigation measures discussed in Chapter 5 of the PEIS may be consulted in determining site-specific requirements. Public involvement will be incorporated into all wind energy development projects to ensure that all concerns and issues are identified and adequately addressed. In general, the scope of the NEPA analyses will be limited to the proposed action on BLM-administered public lands; however, if access to proposed development on adjacent non-BLM-administered lands is entirely dependent on obtaining ROW access across BLM-administered public lands and there are no alternatives to that access, the NEPA analysis for the proposed ROW may need to assess the environmental effects from that proposed development. The BLM's analyses of ROW access projects may tier off of the PEIS to the extent that the proposed project falls within the scope of the PEIS analyses.

- Site-specific environmental analyses will tier from the PEIS and identify and assess any cumulative impacts that are beyond the scope of the cumulative impacts addressed in the PEIS.

- The Categorical Exclusion (CX) applicable to the issuance of short-term ROWs or land use authorizations may be applicable to some site monitoring and testing activities. The relevant CX, established for the BLM in the DOI Departmental Manual 516, Chapter 11, Sec. 11.5, E(19) (DOI 2004), encompasses "issuance of short-term (3 years or less) rights-of-way or land use authorizations for such uses as storage sites, apiary sites, and construction sites where the proposal includes rehabilitation to restore the land to its natural or original condition."

- The BLM will require financial bonds for all wind energy development projects on BLM-administered public lands to ensure compliance with the terms and conditions of the rights-of-way authorization and the requirements of applicable regulatory requirements, including reclamation costs. The amount of the required bond will be determined during the rights-of-way authorization process on the basis of site-specific and project-specific factors. The BLM may also require financial bonds for site monitoring and testing authorizations.

- Entities seeking to develop a wind energy project on BLM-administered public lands shall develop a project-specific Plan of Development (POD) that incorporates all BMPs and, as appropriate, the requirements of other existing and relevant BLM mitigation guidance, including the BLM's interim off-site mitigation guidance (BLM 2005a). Additional mitigation measures will be incorporated into the POD and into the ROW authorization as project stipulations, as needed, to address site-specific and species-specific issues. The POD will include a site plan showing the locations of turbines, roads, power lines, other infrastructure, and other areas of short- and long-term disturbance.

- The BLM will incorporate management goals and objectives specific to habitat conservation for species of concern (e.g., sage-grouse), as appropriate, into the POD for proposed wind energy projects.

- The BLM will consider the visual resource values of the public lands involved in proposed wind energy development projects, consistent with BLM Visual Resource Management (VRM) policies and guidance. The BLM will work with the ROW applicant to incorporate visual design considerations into the planning and design of the project to minimize potential visual impacts of the proposal and to meet the VRM objectives of the area.

- Operators of wind power facilities on BLM-administered public lands shall consult with the BLM and other appropriate federal, state, and local agencies regarding any planned upgrades or changes to the wind facility design or operation. Proposed changes of this nature may require additional environmental analysis and/or revision of the POD.

- The BLM's Wind Energy Development Program will incorporate adaptive management strategies to ensure that potential adverse impacts of wind energy development are avoided (if possible), minimized, or mitigated to acceptable levels. The programmatic policies and BMPs will be updated and revised as new data regarding the impacts of wind power projects become available. At the project-level, operators will be required to develop monitoring programs to evaluate the environmental conditions at the site through all phases of development, to establish metrics against which monitoring observations can be measured, to identify potential mitigation measures, and to establish protocols for incorporating monitoring observations and additional mitigation measures into standard operating procedures and project-specific stipulations.

B.2 Best Management Practices (BMPs)

The BMPs will be adopted as required elements of project-specific PODs and/or as ROW authorization stipulations. They are categorized by development activity: site monitoring and testing, development of the POD, construction, operation, and decommissioning. The BMPs for development of the POD identify required elements of the POD needed to address potential impacts associated with subsequent phases of development.

B.2.1 Site Monitoring and Testing

- The area disturbed by installation of meteorological towers (i.e., footprint) shall be kept to a minimum.

- Existing roads shall be used to the maximum extent feasible. If new roads are necessary, they shall be designed and constructed to the appropriate standard.

- Meteorological towers shall not be located in sensitive habitats or in areas where ecological resources known to be sensitive to human activities (e.g., prairie grouse) are present. Installation of towers shall be scheduled to avoid disruption of wildlife reproductive activities or other important behaviors.

- Meteorological towers installed for site monitoring and testing shall be inspected periodically for structural integrity.

B.2.2 Plan of Development Preparation

General

- The BLM and operators shall contact appropriate agencies, property owners, and other stakeholders early in the planning process to identify potentially sensitive land uses and issues, rules that govern wind energy development locally, and land use concerns specific to the region.

- Available information describing the environmental and sociocultural conditions in the vicinity of the proposed project shall be collected and reviewed as needed to predict potential impacts of the project.

- The Federal Aviation Administration (FAA)-required notice of proposed construction shall be made as early as possible to identify any air safety measures that would be required.

- To plan for efficient use of the land, necessary infrastructure requirements shall be consolidated wherever possible, and current transmission and market access shall be evaluated carefully.

- The project shall be planned to utilize existing roads and utility corridors to the maximum extent feasible, and to minimize the number and length/size of new roads, lay-down areas, and borrow areas.

- A monitoring program shall be developed to ensure that environmental conditions are monitored during the construction, operation, and decommissioning phases. The monitoring program requirements, including adaptive management strategies, shall be established at the project level to ensure that potential adverse impacts of wind energy development are mitigated. The monitoring program shall identify the monitoring requirements for each environmental resource present at the site, establish metrics against which monitoring observations can be measured, identify potential mitigation measures, and establish protocols for incorporating monitoring observations and additional mitigation measures into standard operating procedures and BMPs.

- "Good housekeeping" procedures shall be developed to ensure that during operation the site will be kept clean of debris, garbage, carrion, fugitive trash or waste, and graffiti; to prohibit scrap heaps and dumps; and to minimize storage yards.

Wildlife and Other Ecological Resources

- Operators shall review existing information on species and habitats in the vicinity of the project area to identify potential concerns.

- Operators shall conduct surveys for federal and/or state-protected species and other species of concern (including special status plant and animal species) within the project area and design the project to avoid (if possible), minimize, or mitigate impacts to these resources.

- Operators shall identify important, sensitive, or unique habitats in the vicinity of the project and design the project to avoid (if possible), minimize, or mitigate impacts to these habitats (e.g., locate the turbines, roads, and ancillary facilities in the least environmentally sensitive areas; i.e., away from riparian habitats, streams, wetlands, drainages, or critical wildlife habitats).

- The BLM will prohibit the disturbance of any population of federal listed plant species.

- Operators shall evaluate avian and bat use of the project area and design the project to minimize or mitigate the potential for bird and bat strikes (e.g., development shall not occur in riparian habitats and wetlands). Scientifically rigorous avian and bat use surveys shall be conducted; the amount and extent of ecological baseline data required shall be determined on a project basis.

- Turbines shall be configured to avoid landscape features known to attract raptors, if site studies show that placing turbines there would pose a significant risk to raptors.

- Operators shall determine the presence of bat colonies and avoid placing turbines near known bat hibernation, breeding, and maternity/nursery colonies; in known migration corridors; or in known flight paths between colonies and feeding areas.

- Operators shall determine the presence of active raptor nests (i.e., raptor nests used during the breeding season). Measures to reduce raptor use at a project site (e.g., minimize road cuts, maintain either no vegetation or nonattractive plant species around the turbines) shall be considered.

- A habitat restoration plan shall be developed to avoid (if possible), minimize, or mitigate negative impacts on vulnerable wildlife while maintaining or enhancing habitat values for other species. The plan shall identify revegetation, soil stabilization, and erosion reduction measures that shall be implemented to ensure that all temporary use areas are restored. The plan shall require that restoration occur as soon as possible after completion of activities to reduce the amount of habitat converted at any one time and to speed up the recovery to natural habitats.

- Procedures shall be developed to mitigate potential impacts to special status species. Such measures could include avoidance, relocation of project facilities or lay-down areas, and/or relocation of biota.

- Facilities shall be designed to discourage their use as perching or nesting substrates by birds. For example, power lines and poles shall be configured to minimize raptor electrocutions and discourage raptor and raven nesting and perching.

Visual Resources

- The public shall be involved and informed about the visual site design elements of the proposed wind energy facilities. Possible approaches include conducting public forums for disseminating information, offering organized tours of operating wind developments, and using computer simulation and visualization techniques in public presentations.
- Turbine arrays and turbine design shall be integrated with the surrounding landscape. Design elements to be addressed include visual uniformity, use of tubular towers, proportion and color of turbines, nonreflective paints, and prohibition of commercial messages on turbines.
- Other site design elements shall be integrated with the surrounding landscape. Elements to address include minimizing the profile of the ancillary structures, burial of cables, prohibition of commercial symbols, and lighting. Regarding lighting, efforts shall be made to minimize the need for and amount of lighting on ancillary structures.

Roads

- An access road siting and management plan shall be prepared incorporating existing BLM standards regarding road design, construction, and maintenance such as those described in the BLM 9113 Manual (BLM 1985) and the *Surface Operating Standards for Oil and Gas Exploration and Development* (RMRCC 1989) (i.e., the Gold Book).

Ground Transportation

- A transportation plan shall be developed, particularly for the transport of turbine components, main assembly cranes, and other large pieces of equipment. The plan shall consider specific object sizes, weights, origin, destination, and unique handling requirements and shall evaluate alternative transportation approaches. In addition, the process to be used to comply with unique state requirements and to obtain all necessary permits shall be clearly identified.
- A traffic management plan shall be prepared for the site access roads to ensure that no hazards would result from the increased truck traffic and that traffic flow would not be adversely impacted. This plan shall incorporate measures such as informational signs, flaggers when equipment may result in blocked throughways, and traffic cones to identify any necessary changes in temporary lane configuration.

Noise

- Proponents of a wind energy development project shall take measurements to assess the existing background noise levels at a given site and compare them with the anticipated noise levels associated with the proposed project.

Noxious Weeds and Pesticides

- Operators shall develop a plan for control of noxious weeds and invasive species, which could occur as a result of new surface disturbance activities at the site. The plan shall address monitoring, education of personnel on weed identification, the manner in which weeds spread, and methods for treating infestations. The use of certified weed-free mulching shall be required. If trucks and construction equipment are arriving from locations with known invasive vegetation problems, a controlled inspection and cleaning area shall be established to visually inspect construction equipment arriving at the project area and to remove and collect seeds that may be adhering to tires and other equipment surfaces.

- If pesticides are used on the site, an integrated pest management plan shall be developed to ensure that applications would be conducted within the framework of BLM and DOI policies and entail only the use of EPA-registered pesticides. Pesticide use shall be limited to nonpersistent, immobile pesticides and shall only be applied in accordance with label and application permit directions and stipulations for terrestrial and aquatic applications.

Cultural/Historic Resources

- The BLM will consult with Indian Tribal governments early in the planning process to identify issues regarding the proposed wind energy development, including issues related to the presence of cultural properties, access rights, disruption to traditional cultural practices, and impacts to visual resources important to the Tribe(s).

- The presence of archaeological sites and historic properties in the area of potential effect shall be determined on the basis of a records search of recorded sites and properties in the area and/or, depending on the extent and reliability of existing information, an archaeological survey. Archaeological sites and historic properties present in the area of potential effect shall be reviewed to determine whether they meet the criteria of eligibility for listing on the *National Register of Historic Places* (NRHP).

- When any rights-of-way application includes remnants of a National Historic Trail, is located within the viewshed of a National Historic Trail's designated centerline, or includes or is within the viewshed of a trail eligible for listing on the NRHP, the operator shall evaluate the potential visual impacts to the trail associated with the proposed project and identify appropriate mitigation measures for inclusion as stipulations in the POD.

- If cultural resources are present at the site, or if areas with a high potential to contain cultural material have been identified, a cultural resources management plan (CRMP) shall be developed. This plan shall address mitigation activities to be taken for cultural resources found at the site. Avoidance of the area is always the preferred mitigation option. Other mitigation options include archaeological survey and excavation (as warranted) and monitoring. If an area exhibits a high potential, but no artifacts were observed during an archaeological survey, monitoring by a qualified archaeologist could be required during all excavation and earthmoving in the high-potential area. A report shall be prepared documenting these activities. The CRMP also shall (1) establish a monitoring program, (2) identify measures to prevent potential looting/vandalism or erosion impacts, and (3) address the education of workers and the public to make them aware of the consequences of unauthorized collection of artifacts and destruction of property on public land.

Paleontological Resources

- Operators shall determine whether paleontological resources exist in a project area on the basis of the sedimentary context of the area, a records search for past paleontological finds in the area, and/or, depending on the extent of existing information, a paleontological survey.
- If paleontological resources are present at the site, or if areas with a high potential to contain paleontological material have been identified, a paleontological resources management plan shall be developed. This plan shall include a mitigation plan for collection of the fossils; mitigation could include avoidance, removal of fossils, or monitoring. If an area exhibits a high potential but no fossils were observed during survey, monitoring by a qualified paleontologist could be required during all excavation and earthmoving in the sensitive area. A report shall be prepared documenting these activities. The paleontological resources management plan also shall (1) establish a monitoring program, (2) identify measures to prevent potential looting/vandalism or erosion impacts, and (3) address the education of workers and the public to make them aware of the consequences of unauthorized collection of fossils on public land.

Hazardous Materials and Waste Management

- Operators shall develop a hazardous materials management plan addressing storage, use, transportation, and disposal of each hazardous material anticipated to be used at the site. The plan shall identify all hazardous materials that would be used, stored, or transported at the site. It shall establish inspection procedures, storage requirements, storage quantity limits, inventory control, nonhazardous product substitutes, and disposition of excess materials. The plan shall also identify requirements for notices to federal and local emergency response authorities and include emergency response plans.
- Operators shall develop a waste management plan identifying the waste streams that are expected to be generated at the site and addressing hazardous waste determination procedures, waste storage locations, waste-specific management and disposal requirements, inspection procedures, and waste minimization procedures. This plan shall address all solid and liquid wastes that may be generated at the site.
- Operators shall develop a spill prevention and response plan identifying where hazardous materials and wastes are stored on site, spill prevention measures to be implemented, training requirements, appropriate spill response actions for each material or waste, the locations of spill response kits on site, a procedure for ensuring that the spill response kits

are adequately stocked at all times, and procedures for making timely notifications to authorities.

Storm Water

- Operators shall develop a storm water management plan for the site to ensure compliance with applicable regulations and prevent off-site migration of contaminated storm water or increased soil erosion.

Human Health and Safety

- A safety assessment shall be conducted to describe potential safety issues and the means that would be taken to mitigate them, including issues such as site access, construction, safe work practices, security, heavy equipment transportation, traffic management, emergency procedures, and fire control.

- A health and safety program shall be developed to protect both workers and the general public during construction, operation, and decommissioning of a wind energy project. Regarding occupational health and safety, the program shall identify all applicable federal and state occupational safety standards; establish safe work practices for each task (e.g., requirements for personal protective equipment and safety harnesses; Occupational Safety and Health Administration [OSHA] standard practices for safe use of explosives and blasting agents; and measures for reducing occupational electric and magnetic fields [EMF] exposures); establish fire safety evacuation procedures; and define safety performance standards (e.g., electrical system standards and lightning protection standards). The program shall include a training program to identify hazard training requirements for workers for each task and establish procedures for providing required training to all workers. Documentation of training and a mechanism for reporting serious accidents to appropriate agencies shall be established.

- Regarding public health and safety, the health and safety program shall establish a safety zone or setback for wind turbine generators from residences and occupied buildings, roads, rights-of-ways, and other public access areas that is sufficient to prevent accidents resulting from the operation of wind turbine generators. It shall identify requirements for temporary fencing around staging areas, storage yards, and excavations during construction or decommissioning activities. It shall also identify measures to be taken during the operation phase to limit public access to hazardous facilities (e.g., permanent fencing would be installed only around electrical substations, and turbine tower access doors would be locked).

- Operators shall consult with local planning authorities regarding increased traffic during the construction phase, including an assessment of the number of vehicles per day, their size, and type. Specific issues of concern (e.g., location of school bus routes and stops) shall be identified and addressed in the traffic management plan.

- If operation of the wind turbines is expected to cause significant adverse impacts to nearby residences and occupied buildings from shadow flicker, low-frequency sound, or

EMF, site-specific recommendations for addressing these concerns shall be incorporated into the project design (e.g., establishing a sufficient setback from turbines).

- The project shall be planned to minimize electromagnetic interference (EMI) (e.g., impacts to radar, microwave, television, and radio transmissions) and comply with Federal Communications Commission [FCC] regulations. Signal strength studies shall be conducted when proposed locations have the potential to impact transmissions. Potential interference with public safety communication systems (e.g., radio traffic related to emergency activities) shall be avoided.
- The project shall be planned to comply with FAA regulations, including lighting regulations, and to avoid potential safety issues associated with proximity to airports, military bases or training areas, or landing strips.
- Operators shall develop a fire management strategy to implement measures to minimize the potential for a human-caused fire.

B.2.3 Construction

General

- All control and mitigation measures established for the project in the POD and the resource-specific management plans that are part of the POD shall be maintained and implemented throughout the construction phase, as appropriate.
- The area disturbed by construction and operation of a wind energy development project (i.e., footprint) shall be kept to a minimum.
- The number and size/length of roads, temporary fences, lay-down areas, and borrow areas shall be minimized.
- Topsoil from all excavations and construction activities shall be salvaged and reapplied during reclamation.
- All areas of disturbed soil shall be reclaimed using weed-free native grasses, forbs, and shrubs. Reclamation activities shall be undertaken as early as possible on disturbed areas.
- All electrical collector lines shall be buried in a manner that minimizes additional surface disturbance (e.g., along roads or other paths of surface disturbance). Overhead lines may be used in cases where burial of lines would result in further habitat disturbance.
- Operators shall identify unstable slopes and local factors that can induce slope instability (such as groundwater conditions, precipitation, earthquake activities, slope angles, and the dip angles of geologic strata). Operators also shall avoid creating excessive slopes during excavation and blasting operations. Special construction techniques shall be used where applicable in areas of steep slopes, erodible soil, and stream channel crossings.

- Erosion controls that comply with county, state, and federal standards shall be applied. Practices such as jute netting, silt fences, and check dams shall be applied near disturbed areas.

Wildlife

- Guy wires on permanent meteorological towers shall be avoided, however, may be necessary on temporary meteorological towers installed during site monitoring and testing.

- In accordance with the habitat restoration plan, restoration shall be undertaken as soon as possible after completion of construction activities to reduce the amount of habitat converted at any one time and to speed up the recovery to natural habitats.

- All construction employees shall be instructed to avoid harassment and disturbance of wildlife, especially during reproductive (e.g., courtship and nesting) seasons. In addition, pets shall not be permitted on site during construction.

Visual Resources

- Operators shall reduce visual impacts during construction by minimizing areas of surface disturbance, controlling erosion, using dust suppression techniques, and restoring exposed soils as closely as possible to their original contour and vegetation.

Roads

- Existing roads shall be used, but only if in safe and environmentally sound locations. If new roads are necessary, they shall be designed and constructed to the appropriate standard and be no higher than necessary to accommodate their intended functions (e.g., traffic volume and weight of vehicles). Excessive grades on roads, road embankments, ditches, and drainages shall be avoided, especially in areas with erodible soils. Special construction techniques shall be used, where applicable. Abandoned roads and roads that are no longer needed shall be recontoured and revegetated.

- Access roads and on-site roads shall be surfaced with aggregate materials, wherever appropriate.

- Access roads shall be located to follow natural contours and minimize side hill cuts.

- Roads shall be located away from drainage bottoms and avoid wetlands, if practicable.

- Roads shall be designed so that changes to surface water runoff are avoided and erosion is not initiated.

- Access roads shall be located to minimize stream crossings. All structures crossing streams shall be located and constructed so that they do not decrease channel stability or increase water velocity. Operators shall obtain all applicable federal and state permits.

- Existing drainage systems shall not be altered, especially in sensitive areas such as erodible soils or steep slopes. Potential soil erosion shall be controlled at culvert outlets with appropriate structures. Catch basins, roadway ditches, and culverts shall be cleaned and maintained regularly.

Ground Transportation

- Project personnel and contractors shall be instructed and required to adhere to speed limits commensurate with road types, traffic volumes, vehicle types, and site-specific conditions, to ensure safe and efficient traffic flow and to reduce wildlife collisions and disturbance and airborne dust.
- Traffic shall be restricted to the roads developed for the project. Use of other unimproved roads shall be restricted to emergency situations.
- Signs shall be placed along construction roads to identify speed limits, travel restrictions, and other standard traffic control information. To minimize impacts on local commuters, consideration shall be given to limiting construction vehicles traveling on public roadways during the morning and late afternoon commute time.

Air Emissions

- Dust abatement techniques shall be used on unpaved, unvegetated surfaces to minimize airborne dust.
- Speed limits (e.g., 25 mph [40 km/h]) shall be posted and enforced to reduce airborne fugitive dust.
- Construction materials and stockpiled soils shall be covered if they are a source of fugitive dust.
- Dust abatement techniques shall be used before and during surface clearing, excavation, or blasting activities.

Excavation and Blasting Activities

- Operators shall gain a clear understanding of the local hydrogeology. Areas of groundwater discharge and recharge and their potential relationships with surface water bodies shall be identified.
- Operators shall avoid creating hydrologic conduits between two aquifers during foundation excavation and other activities.
- Foundations and trenches shall be backfilled with originally excavated material as much as possible. Excess excavation materials shall be disposed of only in approved areas or, if suitable, stockpiled for use in reclamation activities.

- Borrow material shall be obtained only from authorized and permitted sites. Existing sites shall be used in preference to new sites.

- Explosives shall be used only within specified times and at specified distances from sensitive wildlife or streams and lakes, as established by the BLM or other federal and state agencies.

Noise

- Noisy construction activities (including blasting) shall be limited to the least noise-sensitive times of day (i.e., daytime only between 7 a.m. and 10 p.m.) and weekdays.

- All equipment shall have sound-control devices no less effective than those provided on the original equipment. All construction equipment used shall be adequately muffled and maintained.

- All stationary construction equipment (i.e., compressors and generators) shall be located as far as practicable from nearby residences.

- If blasting or other noisy activities are required during the construction period, nearby residents shall be notified in advance.

Cultural and Paleontological Resources

- Unexpected discovery of cultural or paleontological resources during construction shall be brought to the attention of the responsible BLM authorized officer immediately. Work shall be halted in the vicinity of the find to avoid further disturbance to the resources while they are being evaluated and appropriate mitigation measures are being developed.

Hazardous Materials and Waste Management

- Secondary containment shall be provided for all on-site hazardous materials and waste storage, including fuel. In particular, fuel storage (for construction vehicles and equipment) shall be a temporary activity occurring only for as long as is needed to support construction activities.

- Wastes shall be properly containerized and removed periodically for disposal at appropriate off-site permitted disposal facilities.

- In the event of an accidental release to the environment, the operator shall document the event, including a root cause analysis, appropriate corrective actions taken, and a characterization of the resulting environmental or health and safety impacts. Documentation of the event shall be provided to the BLM authorized officer and other federal and state agencies, as required.

- Any wastewater generated in association with temporary, portable sanitary facilities shall be periodically removed by a licensed hauler and introduced into an existing municipal sewage treatment facility. Temporary, portable sanitary facilities provided for construction crews shall be adequate to support expected on-site personnel and shall be removed at completion of construction activities.

Public Health and Safety

- Temporary fencing shall be installed around staging areas, storage yards, and excavations during construction to limit public access.

B.2.4 Operation

General

- All control and mitigation measures established for the project in the POD and the resource-specific management plans that are part of the POD shall be maintained and implemented throughout the operational phase, as appropriate. These control and mitigation measures shall be reviewed and revised, as needed, to address changing conditions or requirements at the site, throughout the operational phase. This adaptive management approach would help ensure that impacts from operations are kept to a minimum.

- Inoperative turbines shall be repaired, replaced, or removed in a timely manner. Requirements to do so shall be incorporated into the due diligence provisions of the rights-of-way authorization. Operators will be required to demonstrate due diligence in the repair, replacement, or removal of turbines; failure to do so could result in termination of the rights-of-way authorization.

Wildlife

- Employees, contractors, and site visitors shall be instructed to avoid harassment and disturbance of wildlife, especially during reproductive (e.g., courtship and nesting) seasons. In addition, any pets shall be controlled to avoid harassment and disturbance of wildlife.

- Observations of potential wildlife problems, including wildlife mortality, shall be reported to the BLM authorized officer immediately.

Ground Transportation

- Ongoing ground transportation planning shall be conducted to evaluate road use, minimize traffic volume, and ensure that roads are maintained adequately to minimize associated impacts.

Monitoring Program

- Site monitoring protocols defined in the POD shall be implemented. These will incorporate monitoring program observations and additional mitigation measures into standard operating procedures and BMPs to minimize future environmental impacts.

- Results of monitoring program efforts shall be provided to the BLM authorized officer.

Public Health and Safety

- Permanent fencing shall be installed and maintained around electrical substations, and turbine tower access doors shall be locked to limit public access.

- In the event an installed wind energy development project results in EMI, the operator shall work with the owner of the impacted communications system to resolve the problem. Additional warning information may also need to be conveyed to aircraft with onboard radar systems so that echoes from wind turbines can be quickly recognized.

B.2.5 Decommissioning

General

- Prior to the termination of the rights-of-way authorization, a decommissioning plan shall be developed and approved by the BLM. The decommissioning plan shall include a site reclamation plan and monitoring program.

- All management plans, BMPs, and stipulations developed for the construction phase shall be applied to similar activities during the decommissioning phase.

- All turbines and ancillary structures shall be removed from the site.

- Topsoil from all decommissioning activities shall be salvaged and reapplied during final reclamation.

- All areas of disturbed soil shall be reclaimed using weed-free native shrubs, grasses, and forbs.

- The vegetation cover, composition, and diversity shall be restored to values commensurate with the ecological setting.

APPENDIX C

TRANSPORTATION AND TRAFFIC PLAN

APPENDIX C
TRANSPORTATION AND TRAFFIC PLAN

The purpose of this document is to provide a summary of the manner in which transportation to the site will be managed; estimated transport vehicle trips; construction vehicle and equipment type, quantity, and weight; and load weights. The numbers included in this appendix are based on reasonable assumptions and may vary based on actual construction or operations practices.

C.1 ESTIMATED CONSTRUCTION PERSONNEL AND VEHICLE MOVEMENTS

The number of construction personnel on site is expected to range from 90 to 275 (during peak construction). Construction traffic is expected to usually be around 120 trips per day and peak at approximately 190 trips per day during the construction period (roughly 140 construction personnel vehicles leaving and entering the project site and 50 delivery trucks leaving and entering). For this appendix, one trip is defined as a round trip (that is a vehicle exiting the last public roadway, Highway 93, entering into the project site, and then returning back to the public roadway).

This is likely to be the maximum possible amount of trips and would only occur for about three to six months. Table C-1 outlines the estimated vehicle movements during construction. Personal vehicles of construction personnel will be parked at the main staging area for the site. From this point, only delivery trucks and on-site construction vehicles will be allowed on the construction access roads and will be required to operate within the speed limit of 25 mph.

C.2 EQUIPMENT TO BE TRANSPORTED

The general categories of items to be transported include: turbine components, facility and construction equipment, and facility and construction material. Further detail on each category is provided below.

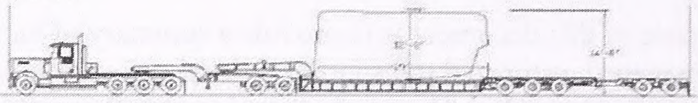
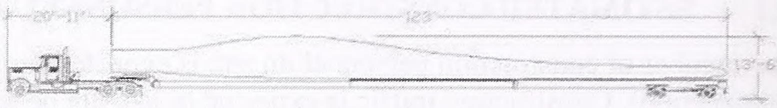
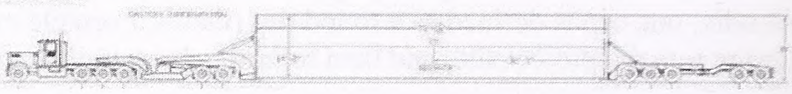
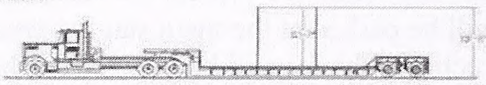
C.2.1 Turbine Components

Turbine components are the most visible transportation requirement for the project. Turbine components generally are described in three sections: blades, towers, and the nacelle. The weights and dimensions for all these components vary depending on the vendor. A reasonable range is provided below.

Each blade typically weighs from 13,000 to 29,000 pounds. Blade lengths are typically between 157 feet and 197 feet.

In general, turbine towers are comprised of three to five sections. Each tower section varies in length and dimension depending on which section (bottom, middle, or top) they are in the tower. In general lower tower sections are the shorter and heavier while higher tower sections are taller and lighter. Tower sections vary in weight from 63,000 pounds to 138,000 pounds. Tower lengths typically range from 32 feet to 98 feet, with diameters ranging from 8 feet to 14.5 feet.

Nacelles (the section of the turbine at the top of the tower) are shipped in various configurations. The weights indicated here include all sub-components that will be added to the nacelle prior to operation. Typical nacelles weigh from 163,000 to 227,000 pounds (note the weight of the rotor hubs are included in this range). Dimensions for nacelles can vary, but do not typically exceed dimensions of a standard construction trailer.

Total Weight	Maximum Axle Weight	Length	Height	Turning Radius	
197,000	20,000	112 ft.	14' 2"	111 ft.	Nacelle Truck 
80,000	15,000	144 ft.	13' 6"	135 ft.	Blade Truck 
212,000	20,000	100 ft.	15'	81 ft.	Tower Truck 
75,000	16,000	80 ft.	13' 8"	49 ft	Hub Truck 

C.2.2 Facility and Construction Equipment

Major equipment for the facility (beyond the turbines) include the main step-up transformers, pad mounted transformers, substation equipment, and substation control building. Major construction equipment includes turbine installation cranes, turbine offloading cranes, earthmoving equipment, trenching equipment, and miscellaneous cranes, forklifts, and lifting equipment. Usually the heaviest piece of these equipment is the main step-up transformer that can weigh as much as 70,000 pounds.

C.2.3. Facility and Construction Material

Significant material for the project includes road aggregate, concrete, rebar steel, underground electrical conductor and fiber optic cable, grounding cable, transmission poles, transmission wire, and materials for the operations and maintenance building. Significant material for construction includes water.

C.3 TRANSPORT REQUIREMENTS

Transport requirements vary depending on the type of equipment being transported. Detail on the transport requirements are provided corresponding to each paragraph in Section C.2.

C.3.1 Turbine Components

The turbine components transportation requirements will generally govern the road design and access design. This is due to the length and weight of the equipment being transported. The length of the components (especially the blades and tower sections) generally result in a requirement of a 150-foot turning radius for all turns and a maximum of a 6-inch hump or dip per 50-foot stretch of road. The weight of the turbine components generally results in a requirement for grades on public roads not to exceed 8 percent and Maximum Load Class (MLC) ratings of 20 tons per axle or greater (MLC ratings are generally only an issue on local roads). Based on state specific transport requirement for oversized loads (which most of the turbine components are) lead and trail flag vehicles may be required, and possibly police escort vehicles (depending on the requirements of each state).

Facility and Construction Equipment

The majority of the facility and construction equipment will use standard transport vehicles and therefore will not have special transport requirements. The main step up transformer(s) generally are permitted loads due to the weight of the transformer. Since the weight of the transformer and axle loading will be equal or less than for the turbine components, this transport requirement will generally not be a factor. The large turbine installation cranes are transported to the site in pieces and assembled on site; accordingly there are generally no special transport requirements for the turbine installation cranes.

Facility and Construction Material

The majority of the facility and construction material will use standard transport vehicles and therefore will not have special transport requirements. Depending on the type of transmission structure used, an oversized vehicle permit may be required to transport them (if a single piece transmission poles over a certain length are used). These loads will have similar transport requirements as the turbine blades. Aggregate loads for the roads and foundation will not have specific transport requirements, but due to the high volume will require dust control measures and a road maintenance program.

C.4 ESTIMATED TRANSPORT VEHICLE TRIP COUNTS

For estimating purposes, the trip count will be based on the number of round trips that transport vehicles will make from the last major highway (Highway 93) to the main construction area. Trip counts within the site will not be estimated as they will be on limited access roads. Trip counts are summarized in Table C-1.

The most visible transport will be the turbine components. Depending on vendor shipping configuration, each turbine will require 7 to 16 semi-trailer loads per turbine. For this project (based on the Plan of Development), there will be a maximum of 283 turbines. Accordingly, during the course of construction, between 1,981 and 4,528 round trips will be required for turbine transport vehicles. The majority of turbine vendors require an average of 10 trucks per turbine, therefore it is expected there will be roughly 2,830 round trips for turbine deliveries.

Depending on how trip counts are measured, aggregate and water could add a significant number of trip counts. For this project, aggregate and water are planned to be obtained from within the project area (from the existing BLM aggregate pit along the main access road), and so the trip count primarily reflects the initial arrival of vehicles on site to start the day and their departure at the end of the work day (assuming they leave the site). Assuming eight aggregate and two water trucks are needed per day over a 26 week period (five day work week), 1,300 rounds trips will be required for aggregate and water trucks (which would likely be less as some truck drivers would elect to leave trucks on site overnight). It is planned that the aggregate and water trucks will enter and exit the site only once per day, and that the majority of their movement will be within the project area.

Even though the plan is to use the BLM aggregate pit within the site, to be conservative, and allow for a contingency, it is assumed that the BLM aggregate pit is supplemented with specialty aggregates or additional aggregates to alleviate temporary shortages. Therefore, it is expected that roughly 4,300 trips will be required for aggregate and water deliveries, and that a reasonable upper limit would be 6,300 trips (assuming approximately 10 truckloads of additional material per foundation in the typical case and 20 truckloads of additional material per foundation on the upper bound case).

The project plans to use an on-site concrete mixing and batching plant, and the concrete will be mixed and hydrated at the batching plant. Concrete mixer trucks will make only one round trip per day with a full load of mixed concrete. Assuming ten concrete mixer trucks working over a 26-week period (five-day work week) 1,300 rounds trips will be required for concrete delivery. Again, it is planned that the concrete mixer trucks will enter and exit the site only once per day, and that the majority of their movement will be within the project area.

Site mobilization and demobilization will require significant transport as well. Each mobilization and demobilization activity will require two round trips (for example the delivery of one construction trailer will require one round trip at the start of the project and one round trip at the conclusion of the project). Equipment and material included in the mobilization and demobilization trip counts include the construction equipment, substation equipment, electrical and transmission equipment and materials, and miscellaneous facilities equipment. Based loosely on previous projects of this size it is expected there will be approximately 500 round trips based on mobilization and demobilization activities.

The last significant contributor to trip counts will be the daily commute of workers to and from the site during construction. It is assumed that most workers will take company or personal vehicles (cars and light duty trucks) from their place of residence or temporary residence to the main job site once per day. It is expected the construction duration will be approximately 12 to 18 months, and that at the peak of construction there will be up to 275 workers on site. However, most workers will not be on site the entire duration of construction and consequently there will usually be less than 275 workers on site on any given day. Assuming for a lower bound estimate an average of 90 worker vehicles on site and a 52-week (five-day work week) construction duration, there will be 23,400 rounds trips for personnel transports. Assuming for an upper bound estimate an average of 140 worker vehicles on site and a 78-week (five-day work week) construction duration there will be 54,600 rounds trips for personnel transports. A reasonable estimate for expected personnel transport round trips for this project is the approximate average of the two, 39,000, spread out over an 18-month duration.

The results of these estimates are summarized in Table C-1.

Table C-1
Estimated Number of Vehicle Round Trips into the Project Site (During Total Construction Period)

Transport Vehicle Category	Lower Bound Estimate	Upper Bound Estimate	Expected Number of Round Trips
Turbine Components	1,981	4,528	2,830
Aggregate and Water	1,300	6,300	4,300
Concrete Delivery Vehicles	1,300	2,300	1,300
Mobilization and Demobilization	500	1,000	500
Personnel Transport	23,400	54,600	39,000
Total	**28,481**	**68,728**	**47,930**

C.5 ESTIMATED TRAFFIC CONGESTION

The expected total round trip count of 47,930 over an 18-month period (as estimated in the previous section) results in an average trip count of 145 trips into and out of the project area per workday (which is slightly higher than the usual trip count mentioned in Section C.1 since higher trip counts during peak construction increase the average). At this level, it is not expected that construction traffic will have a significant impact to the federal interstates or to the Las Vegas or Kingman areas.

According to ADOT, the 2009 Annual Average Daily Traffic (AADT) in the project vicinity along Highway 93 was approximately 9,000 vehicles. Therefore, it is expected that construction traffic for the project will not represent a significant increase. While limited impacts are expected to traffic along the majority of Highway 93, there will likely be some impact to traffic in the vicinity of the turn-off to the entrance from Highway 93 onto the access road to the project as slow-moving vehicles enter and exit.

Daily vehicle usage numbers for County Highway 145 (also known as White Hills Road) are not expected. Construction vehicles along the section of the project access road from Highway 93 to the turn-off for the limited access project site roads will create a noticeable increase in traffic. Non-construction vehicles users of this route should expect slower speeds and increased travel times during the construction period.

APPENDIX D

VISUAL SIMULATIONS AND CONTRAST RATING FORMS

Photographic Simulations and Representative Turbine Views

Organization

The photographic simulations are arranged in numerical order by key observation point (KOP). Each set of simulations includes a photograph of the existing condition and the simulation of Alternative A. Some KOPs also have simulations of additional alternatives, and simulations of dark gray turbines and obstruction lighting.

Photographs of an existing five turbine wind farm in Kingman, Arizona are also included. They are arranged by distance of the viewer to the wind farm. Several of the distances are similar to distances from KOPs to the closest turbine in Alternative A, and are noted on the photograph. The photographs are located after the simulations.

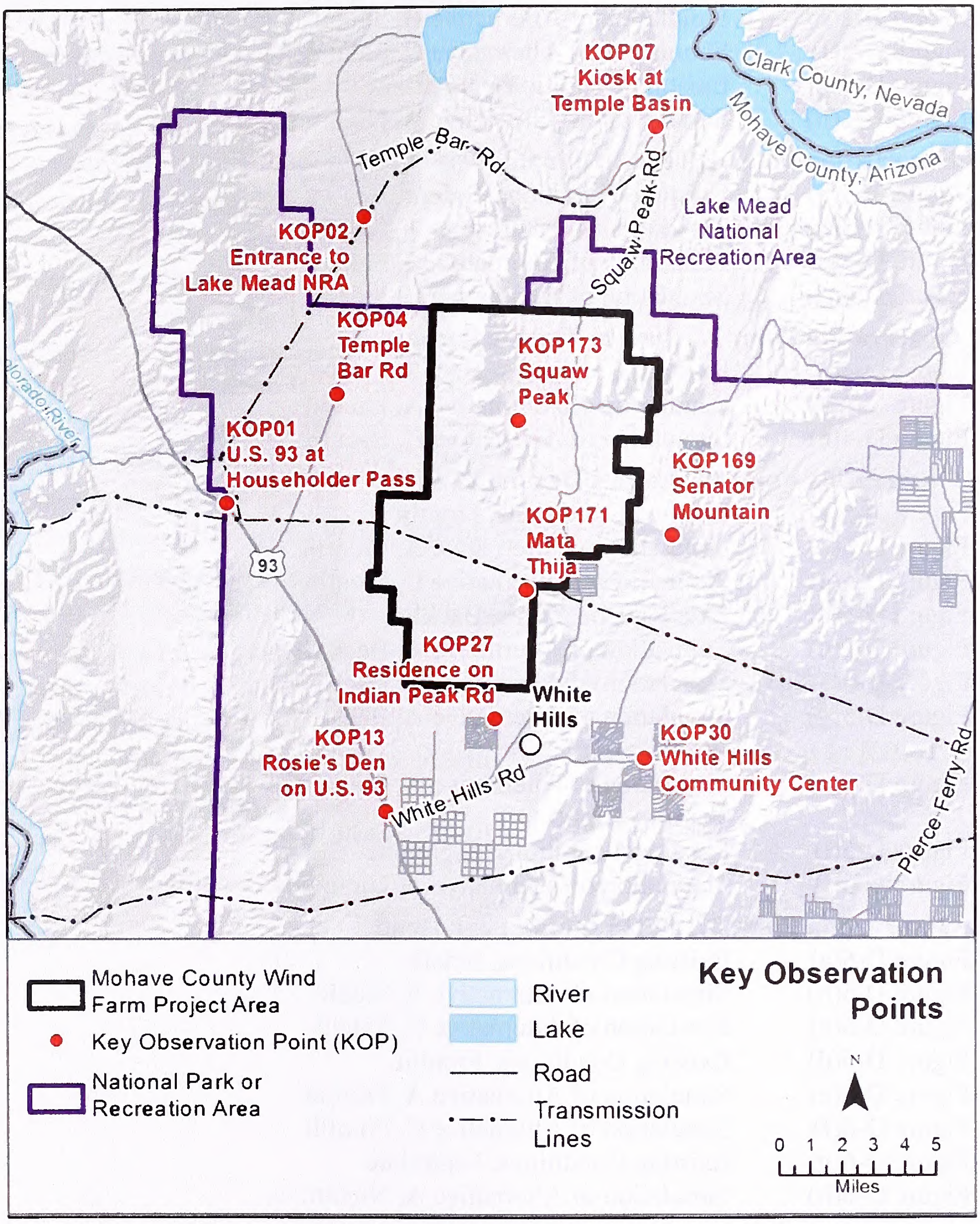


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Figure D-1(a)	Existing Conditions, Backlit
Figure D-1(b)	Simulation of Alternative A, Backlit
Figure D-1(c)	Simulation of Alternative B, Backlit
Figure D-1(d)	Simulation of Alternative C, Backlit

D-2 **Key Observations Point 2, Entrance to Lake Mead NRA**

Figure D-2(a)	Existing Conditions, Backlit
Figure D-2(b)	Simulation of Alternative A, Backlit
Figure D-2(c)	Existing Conditions, Sidelit

Figure D-2(d) Simulation of Alternative A, Sidelit
Figure D-2(e) Simulation of Alternative B, Sidelit
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D-9 Key Observation Point 171, Mata Thija
Figure D-9(a) Existing Conditions, Frontlit
Figure D-9(b) Simulation of Alternative A, Frontlit

D-10 Key Observation Point 173, Squaw Peak
Figure D-10(a) Existing Conditions, Sidelit
Figure D-10(b) Simulation of Alternative A, Sidelit

D-11 **Representative Photograph 1**
Existing Turbines from 0.9 Miles, Sidelit

D-12 **Representative Photograph 2**
Existing Turbines from 0.9 Miles, Nighttime

D-13 **Representative Photograph 3**
Existing Turbines from 1.0 Miles, Frontlit

D-14 **Representative Photograph 4**
Existing Turbines from 1.1 Miles, Sidelit, Similar Viewing Distances as KOP 27 and 169

D-15 **Representative Photograph 5**
Existing Turbines from 1.6 Miles, Sidelit, Similar Viewing Distances as KOP 27 and 169

D-16 **Representative Photograph 6**
Existing Turbines from 1.7 Miles, Sidelit, Similar Viewing Distances as KOP 27 and 169

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Existing Turbines from 2.5 Miles, Sidelit

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Existing Turbines from 4.9 Miles, Frontlit, Similar Viewing Distances as KOP 1 and 30

D-21 **Representative Photograph 11**
Existing Turbines from 7.0 Miles, Sidelit, Similar Viewing Distances as KOP 7

D-22 **Representative Photograph 12**
Existing Turbines from 8.1 Miles, Sidelit

D-23 **Representative Photograph 13**
Existing Turbines from 8.9 Miles, Sidelit

Range of Viewing Conditions and Photographic Details

KOP	Simulation Photographs	Date	Time (mst)	Distance (miles)			Direction	Lighting Conditions	Solar Azimuth	Longatude	Lattatude	Elevation (m)	Camera	Focal Length (mm)	35mm Equivalent
				A	B	C									
1	U.S. 93 at Householder Pass	11/23/09	9:27 AM	5.4	5.4	5.4	East	Back	135.81	35°50'40.20"N	114°34'28.44"W	684.6	Canon Rebel EOS XT	32	50
2	Entrance station to Lake Mead NRA	11/23/09	11:08 AM	3.9	x	x	South	Back	159.07	35°58'42.52"N	114°30'4.77"W	514.3	Canon Rebel EOS XT	32	50
2	Entrance station to Lake Mead NRA (Revised Images)	09/07/11	2:40 PM	3.9	7.0	6.7	South	Side	230.84	35°58'42.47"N	114°30'4.80"W	514.3	Nikon D700	50	50
2	Entrance station to Lake Mead NRA (Revised Images)	09/06/11	8:56 PM	3.9	x	x	South	Night	dark	35°58'42.47"N	114°30'4.80"W	514.3	Nikon D700	50	50
4	Temple Bar Road	11/23/09	12:17 PM	3.3	3.8	3.3	East	Side	177.86	35°53'46.96"N	114°30'48.56"W	563.2	Canon Rebel EOS XT	32	50
7	Kiosk in Temple Basin	11/23/09	1:20 PM	6.5	x	6.5	South	Back	195.51	36°1'27.02"N	114°20'12.53"W	447.8	Canon Rebel EOS XT	32	50
13	Rosie's Den on U.S. 93	11/23/09	4:04 PM	4.3	x	5.0	Northeast	Front	231.97	35°42'18.03"N	114°28'40.28"W	740.9	Canon Rebel EOS XT	32	50
13	Rosie's Den on U.S. 93 (Revised Images)	09/07/11	9:59 AM	4.3	x	5.0	Northeast	Back	124.48	35°42'18.03"N	114°28'40.28"W	740.9	Nikon D700	50	50
13	Rosie's Den on U.S. 93 (Revised Images Gray Turbines)	09/07/11	9:59 AM	4.3	x	x	Northeast	Back	124.48	35°42'18.12"N	114°28'40.16"W	740.9	Nikon D700	50	50
13	Rosie's Den on U.S. 93 (Revised Images)	09/06/11	9:30 PM	4.3	x	x	Northeast	night	124.48	35°42'18.12"N	114°28'40.16"W	740.9	Nikon D700	50	50
27	11025 Indian Peak Road	11/24/09	4:20 PM	1.2	x	1.9	North	Side	234.56	35°44'58.04"N	114°25'2.87"W	835.0	Canon Rebel EOS XT	32	50
27	11025 Indian Peak Road (Revised Images)	09/07/11	10:41 AM	1.2	x	1.9	North	Front	131.67	35°44'58.02"N	114°25'2.20"W	835.0	Nikon D700	50	50
27	11025 Indian Peak Road (Revised Images)	09/06/11	10:08 PM	1.2	x	x	North	Night	dark	35°44'58.02"N	114°25'2.20"W	835.0	Nikon D700	50	50
30	White Hills Community Center	04/16/10	4:09 PM	4.6	x	5.3	Northwest	Side / Back	255.71	35°43'53.91"N	114°19'58.51"W	1095.4	Canon Rebel EOS XT	32	50
169	Senator Mountain	04/15/10	10:09 AM	1.7	x	x	West	Front	118.37	35°50'10.90"N	114°19'14.14"W	1512.3	Canon Rebel EOS XT	32	50
171	Mata Thija	04/15/10	11:48 AM	0.9	x	x	Northwest	Front	153.43	35°48'32.85"N	114°24'8.24"W	933.5	Canon Rebel EOS XT	32	50
173	Squaw Peak	04/15/10	4:04 PM	0.2	x	x	Northwest	Side	254.23	35°53'13.35"N	114°24'34.05"W	832.3	Canon Rebel EOS XT	32	50

ID	Representative Photographs of Existing Turbines near Kingman, Arizona	Date	Time (mst)	Distance (Miles)	Direction	Lighting Conditions	Solar Azimuth	Longitude	Latitude	Elevation (m)	Camera	Focal Length (mm)	35mm equivalent
1	Representative photograph (Similar to KOP's 1, 30)	09/08/11	1150 AM	4.9	Northeast	Front	158.52	35°9'39.71"N	114°4'31.51"W	936	Nikon D700	50	50
2	Representative photograph (Similar to KOP 2)	09/08/11	9:28 AM	3.1	Southwest	side	113.5	35°9'39.71"N	114°4'31.51"W	936	Nikon D700	50	50
3	Representative photograph (Similar to KOP's 4, 13)	09/07/11	4:54 PM	4.7	Northeast	side/ front	260.03	35°8"29.29"N	114°3'7.49"W	1089	Nikon D700	50	50
4	Representative photograph (Similar to KOP's 7)	09/08/11	11:44 AM	7	Northeast	side	155.83	35°9'58.03"N	114°3'42.97"W	964	Nikon D700	50	50
5	Representative photograph (Similar to KOP's 27, 169)	09/08/11	10:48 AM	1.1	Northeast	back	134.28	35°10'18.23"N	114°3'32.93"W	974	Nikon D700	50	50
6	Representative photograph (Similar to KOP's 27, 169)	09/08/11	9:37 AM	1.6	South	side	115.38	35°7'58.05"N	114°5'12.63"W	919	Nikon D700	50	50
7	Representative photograph (Similar to KOP's 27, 169)	09/07/11	7:28 PM	0.9	Southeast	night	282.15	35°7'43.55"N	114°6'12.34"W	873	Nikon D700	50	50
8	Representative photograph (Similar to KOP's 27, 169)	09/08/11	11:15 AM	1.7	Northeast	side	143.86	35°11'17.04"N	114°2'15.73"W	1054	Nikon D700	50	50
9	Representative photograph (Similar to KOP 173)	09/07/11	5:05 PM	0.9	Southeast	side	261.74	35°5'49.55"N	114°7'5.51"W	812	Nikon D700	50	50
10	Representative photograph at 8 Miles	09/07/11	1150 AM	8.1	Northeast	Front/Side	158.02	35°5'39.84"N	114°7'7.23"W	812	Nikon D700	50	50
11	Representative photograph at 9 Miles	09/08/11	11:15 AM	8.9	Northeast	Front	143.62	35°3'39.13"N	114°7'27.79"W	778	Nikon D700	50	50
12	Representative photograph (Similar to KOP's 27, 169)	09/08/11	11:44 AM	0.9	Northeast	Front/Side	155.63	35°2'41.11"N	114°7'40.58"W	763	Nikon D700	50	50
13	Representative photograph at 2.5 Miles	09/08/11	9:37 AM	2.5	South	Side	115.27	35°2'2.60"N	114°8'1.35"W	740	Nikon D700	50	50

Simulation Methodology

The simulation process can be broken down into five main steps: data collection, modeling, camera viewpoint alignment, rendering, and compositing.

Field data collection is a key component to the simulation process. To ensure a high degree of visual accuracy in the simulations, global positioning systems equipment (GPS) was used to record the date, time, and location of each photograph. The degree of accuracy of the GPS location data is to within 3.3 feet (approximately 1 meter). Digital photographs were taken from KOPs with views toward the location of the proposed facilities. A 10 megapixel camera with a 50 millimeter lens was used consistently for all photographs. Overlapping photographs were taken and then electronically converted into one panoramic view for each KOP.

In addition to the field data collection, information was collected regarding the proposed structures' size, location, height, and color. This information was then used to create a real-world scaled, computer-generated model of the proposed facilities in Autodesk AutoCAD version 2010 and Civil 3D version 2010 computer-aided design (CAD) software. The model was then imported into Autodesk 3ds Max Design version 2010 software where color and texture information were added to resemble the materials that are planned to be used.

To generate a correct view relative to the actual photograph, the electronic camera was placed in the digital environment at a location corresponding to the real-world location provided by GPS records collected during the field visits. The electronic camera lens is set to match the camera lens focal length that was actually used in the field. This allows for viewing of the computer-generated model in the same way that the facilities would be viewed in the field. Each camera was then adjusted to match the photograph taken. Information such as time, date, and aperture were imported from the metadata information the digital camera embeds into each image. These settings allow the digital environment settings for sun angle to be modeled accurately to correctly match the light and shadows on the photographs.

The model of the proposed facilities, the camera and the lighting information was then used in a process called rendering to generate a two-dimensional image of the proposed facility representing the view from each of the KOPs.

The rendered image was then composited with the existing photograph. Any additional filters required for appropriate atmospheric conditions (such as blur, focus, haze) were then applied. Foreground objects were verified at this point; foreground objects are any existing objects such as landscape or buildings that would screen the viewer from seeing the proposed facilities. Areas of the rendering that are blocked, or screened by foreground objects were then masked so they cannot be seen in the final simulation.

The resulting photographic simulations show the white turbines with various shades of white and gray. The color variation was automatically created by the software, and replicates the real life appearance of existing white turbines. The appearance of the proposed project under different seasons or different time of day was simulated for select KOPs, and used to demonstrate the appearance of turbines under varying lighting conditions (front lit, side lit, or back lit).

Contrast Rating Forms and KOP Descriptions

The contrast rating forms are arranged in numerical order by KOP and are located after the photographic simulations in this appendix. Sections C and D of the forms refer to the contrasts as represented in the simulations.

The following table is a detailed description of the existing visual conditions from each KOP, arranged by common and/or sensitive views from five general areas.

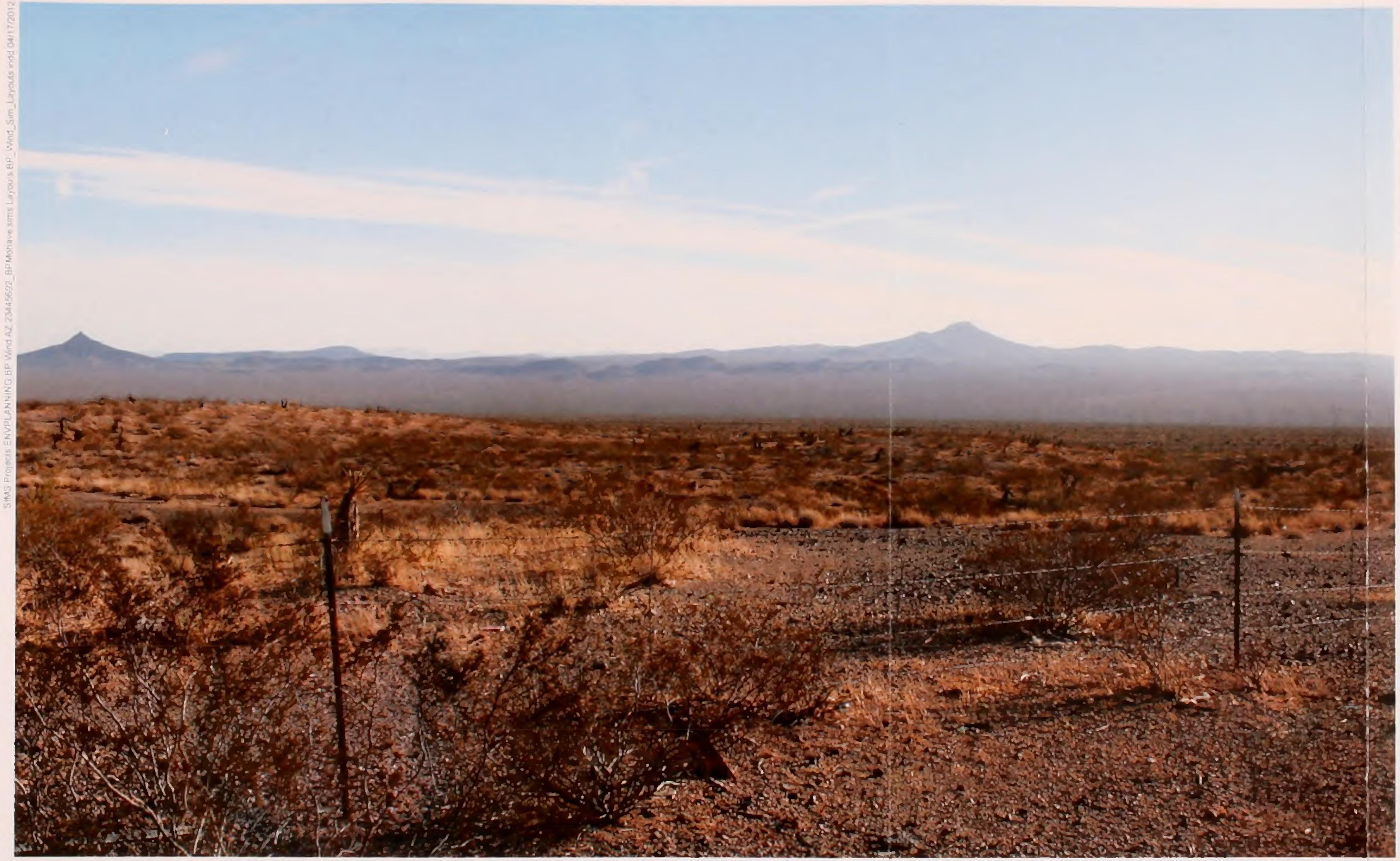
Existing Visual Conditions

Key Observation Point Location	KOP Description	Distance from Wind Farm Site Boundary (approx.)
	Temple Bar Road (Outside the Lake Mead NRA)	
Temple Bar Road KOP 4	KOP 4 represents views of recreational motorists traveling northeast on Temple Bar Road approximately 11.3 miles from Alkali Cove at Lake Mead. KOP 4 would also represent direct views of the Reclamation land. The open panoramic views across the Detrital Valley toward Squaw Peak in the background distance zone exhibit moderate levels of variation in form, line, color, and texture. There are scattered manmade features in the view, not including the roadway, which are not easily identified from this distance. Views of some distinct landscape features as well as diversely colored vegetation are of moderate scenic quality due to the overall naturalness of the view.	3 miles to all three alternatives
	Lake Mead NRA	
Entrance station to Lake Mead NRA KOP 2	KOP 2 represents views of recreationists from the entrance station approximately 3 miles into the Lake Mead NRA on Temple Bar Road looking south. KOP 2 would also represent direct views of the Reclamation land within the Project. From this low elevation vantage point, there are open panoramic and focal views across the valley formed by Detrital Wash toward Senator Mountain and the White Hills in the background. There are few manmade features in the view with the exception of the roadway and a small power line in the immediate foreground of the view. Open panoramic and focal views of rolling hills, dramatic mountainous terrain and silhouettes, and the broad, sweeping valley terrain offer moderate to high scenic quality due to the lack of disturbance and variation of form, line, color, and texture of the natural landscape elements when compared to the surrounding region.	3 miles to the closest alternative (A)
Kiosk at Temple Basin KOP 7	KOP 7 represents recreational views at the kiosk on Temple Bar Road approximately 0.5 mile west from the campgrounds at Temple Bar on Lake Mead. The open panoramic and low elevation views toward Golden Rule Peak and Senator Mountain in the background exhibit moderate levels of variation in form, line, color, and texture. There are few apparent manmade features in the view, not including the roadway and kiosk, and the mottled vegetation creates a uniformity of foliage. Views of some distinct landscape features as well as uniform, undulating vegetation are of moderate scenic quality.	8 miles to all three alternatives

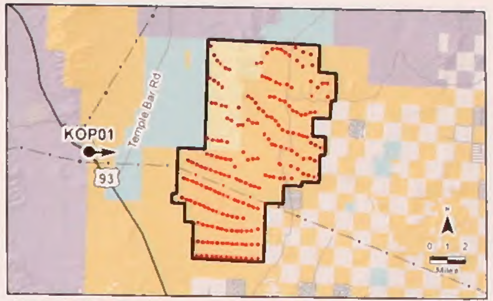
Key Observation Point Location	KOP Description	Distance from Wind Farm Site Boundary (approx.)
	Traditional Cultural Areas of the Hualapai Tribe	
Senator Mountain KOP 169	KOP 169 represents viewers on Senator Mountain, an area of cultural importance to the Hualapai Tribe, looking west towards the dramatic terrain surrounding Mount Wilson, Squaw Peak, Pilot Knob, and the Black Mountains. The open panoramic views of the Detrital Valley and surrounding mountains exhibit few discernable man-made features and high levels of variation in form, line, color, and texture. A high elevation view of the undulating and angular landscape features and rugged mountain silhouettes is of high scenic quality.	1.5 miles from the closest alternatives (A and B)
Mata Thija KOP 171	KOP 171 represents viewers at Mata Thija, an area of cultural importance to the Hualapai Tribe, looking north towards the dramatic terrain surrounding Mount Wilson, Squaw Peak, Pilot Knob, and the Black Mountains. The open panoramic views of the Detrital Valley and surrounding mountains exhibit few discernable man-made features and high levels of variation in form, line, color, and texture. The man-made features that are apparent in the view include the two parallel high-voltage transmission lines that cross the foreground of the view. A view of the undulating and angular landscape features, crossed by the transmission lines in the foreground to middleground, and the rugged mountain silhouettes is of moderate scenic quality.	Inside (Alternative A) or at boundary (Alternatives B and C)
Squaw Peak KOP 173	KOP 173 represents recreational and tribal viewers adjacent to Squaw Peak, an area of cultural importance to the Hualapai Tribe, looking north towards the dramatic terrain surrounding Squaw Peak. The focal views of the peak and surrounding hills and mountains exhibit few discernable man-made features and high levels of variation in form, line, color, and texture. The man-made features that are apparent in the view include the meteorological tower in the foreground of the view. A view of the undulating and angular landscape features, with the meteorological tower in the foreground, and the rugged mountain silhouettes is of moderate to high scenic quality.	Inside (Alternative A) or at boundary (Alternatives B and C)
	US 93	
US 93 at Householder Pass KOP 1	KOP 1 represents views of motorists traveling south on US 93 toward Dolan Springs. This portion of US 93 is considered a scenic route in the Mohave County General Plan. KOP 1 would also represent direct views of the Reclamation land within the Wind Farm Site. From this high elevation vantage point, there are open panoramic and focal views across the valley formed by Detrital Wash toward Senator Mountain in the background. There are numerous manmade features in the view including the highway, two parallel high-voltage transmission lines, and a fence in the immediate foreground of the view. Although the transmission lines are incongruent with the surrounding landscape elements they do not compete with more natural-appearing features for attention due to the overall scale of the built elements within the overall view. Open panoramic and focal views of rolling hills, mountainous terrain, and the broad, sweeping valley terrain offer low to moderate scenic quality due to the visible level of manmade disturbance in the view and the natural landscape elements that are common in the region.	3 miles to all three alternatives

Key Observation Point Location	KOP Description	Distance from Wind Farm Site Boundary (approx.)
US 93 at Rosie's Den KOP 13	KOP 13 represents views of motorists and recreationists at Rosie's Den on US 93, approximately 11 miles south of KOP 1 on US 93 at Householder Pass, looking east toward the White Hills area. KOP 13 would also represent direct views of both the Reclamation land as well as BLM lands within the Wind Farm Site. The open panoramic views toward the White Hills community exhibit rural residential features and moderate levels of variation in form, line, color, and texture. There are few apparent manmade features in the view, other than the roadway in the foreground. The mottled yet relatively uniform vegetation creates a congruent overall landscape character. Views of some distinct landscape features as well as uniform, undulating vegetation are of moderate scenic quality.	4 miles to the closest alternative (A)
	White Hills Area	
Residence on Indian Peak Road KOP 27	KOP 27 represents residents of the White Hills community on Indian Peak Road looking north towards the dramatic terrain surrounding Squaw Peak and the foothills of the White Hills. The open, panoramic views of the mountains exhibit some rural residential features and moderate levels of variation in form, line, color, and texture. There are few manmade features in the view, which are not apparent due to the tall, dense vegetation (Joshua trees), which creates a congruent overall landscape character. Views of undulating and angular landscape features as well as the tall, mottled vegetation are of moderate scenic quality.	0.5 mile to the closest alternative (A)
White Hills Community Center KOP 30	KOP 30 represents residents and guests at the White Hills Community Center on Lunado Drive (approximately 4 miles east of the KOP 27, the residence on Indian PeakRoad), looking north towards the dramatic terrain surrounding Senator Peak, Squaw Peak, and Mount Wilson. The partially screened, focal views of the mountains exhibit little rural residential features and moderate to high levels of variation in form, line, color, and texture. There are few manmade features adjacent to the view, which are not apparent, creating a congruent overall landscape character. A view of undulating and angular landscape features and silhouettes as well as the tall, mottled vegetation is of moderate to high scenic quality.	4 miles from the closest alternative (A)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Viewpoint Location Map

Legend

- ↑ Key Observation Point
- ☐ Wind Farm Site
- · Proposed Wind Turbine Layout
- ·—·— Transmission Line
- —— U.S. Highway
- —— Road

Surface Management

- ▨ Bureau of Land Management
- ▨ Bureau of Reclamation
- ▨ National Park Service
- ▨ State Trust Land
- ☐ Private Land

Photograph Information

Time of photograph:	10:27 AM
Date of photograph:	11-23-09
Weather condition:	Partly Cloudy
Viewing direction:	East
Latitude:	35°50'40.20"N
Longitude:	114°34'28.44"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Backlit
Nearest turbine:	NA

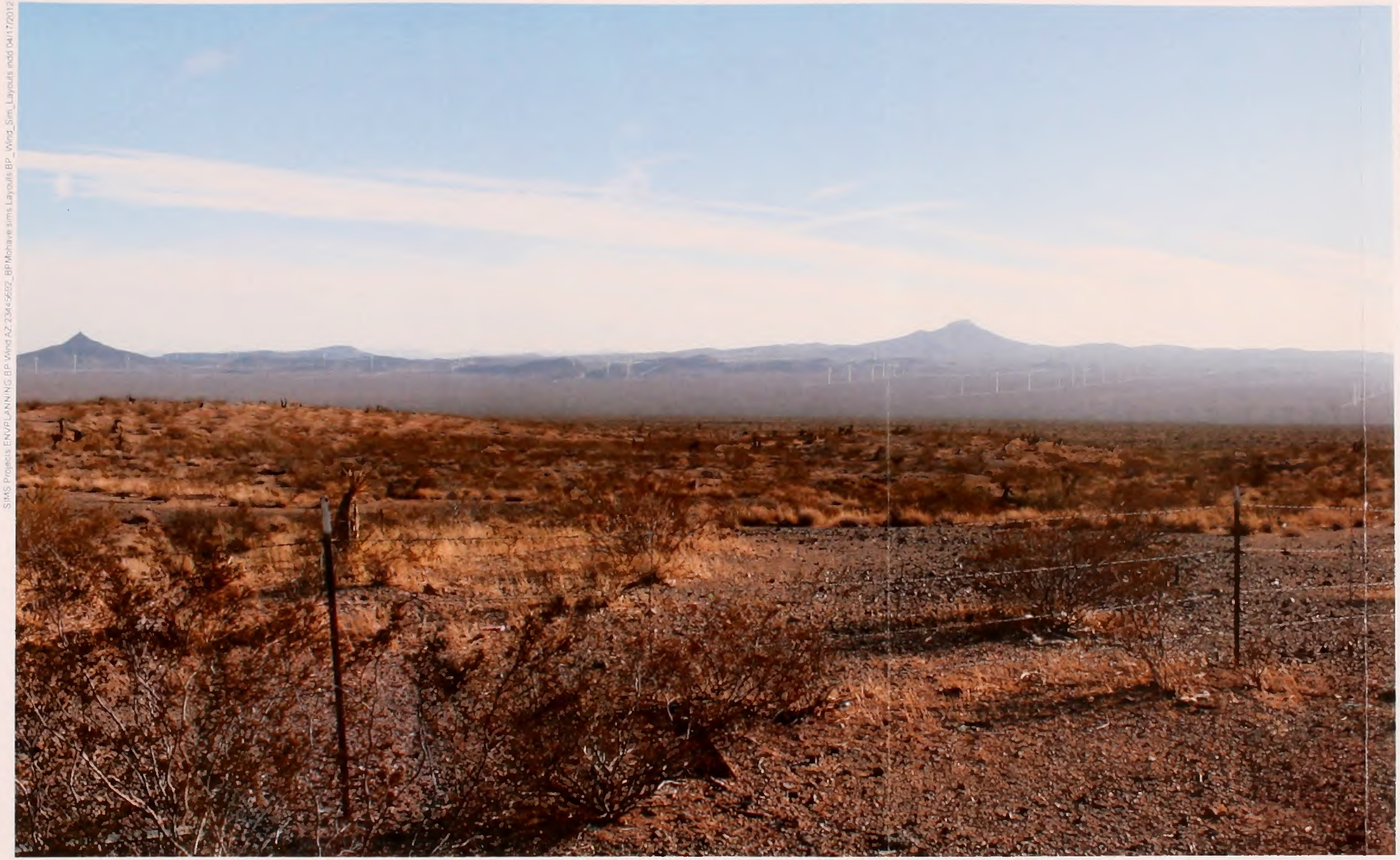
Existing Conditions from Key Observation Point 1 US 93 at Householder Pass Backlit Conditions

Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-1(a)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



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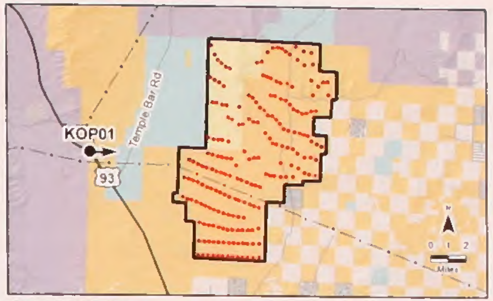


Viewpoint Location Map

Legend

Key Observation Point
Wind Farm Site
Proposed Wind Turbine Layout
Transmission Line
U.S. Highway
Road

Surface Management

Bureau of Land Management
Bureau of Reclamation
National Park Service
State Trust Land
Private Land

Photograph Information

Time of photograph:	10:27 AM
Date of photograph:	11-23-09
Weather condition:	Partly Cloudy
Viewing direction:	East
Latitude:	35°50'40.20"N
Longitude:	114°34'28.44"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Backlit
Nearest turbine:	5.4 Miles

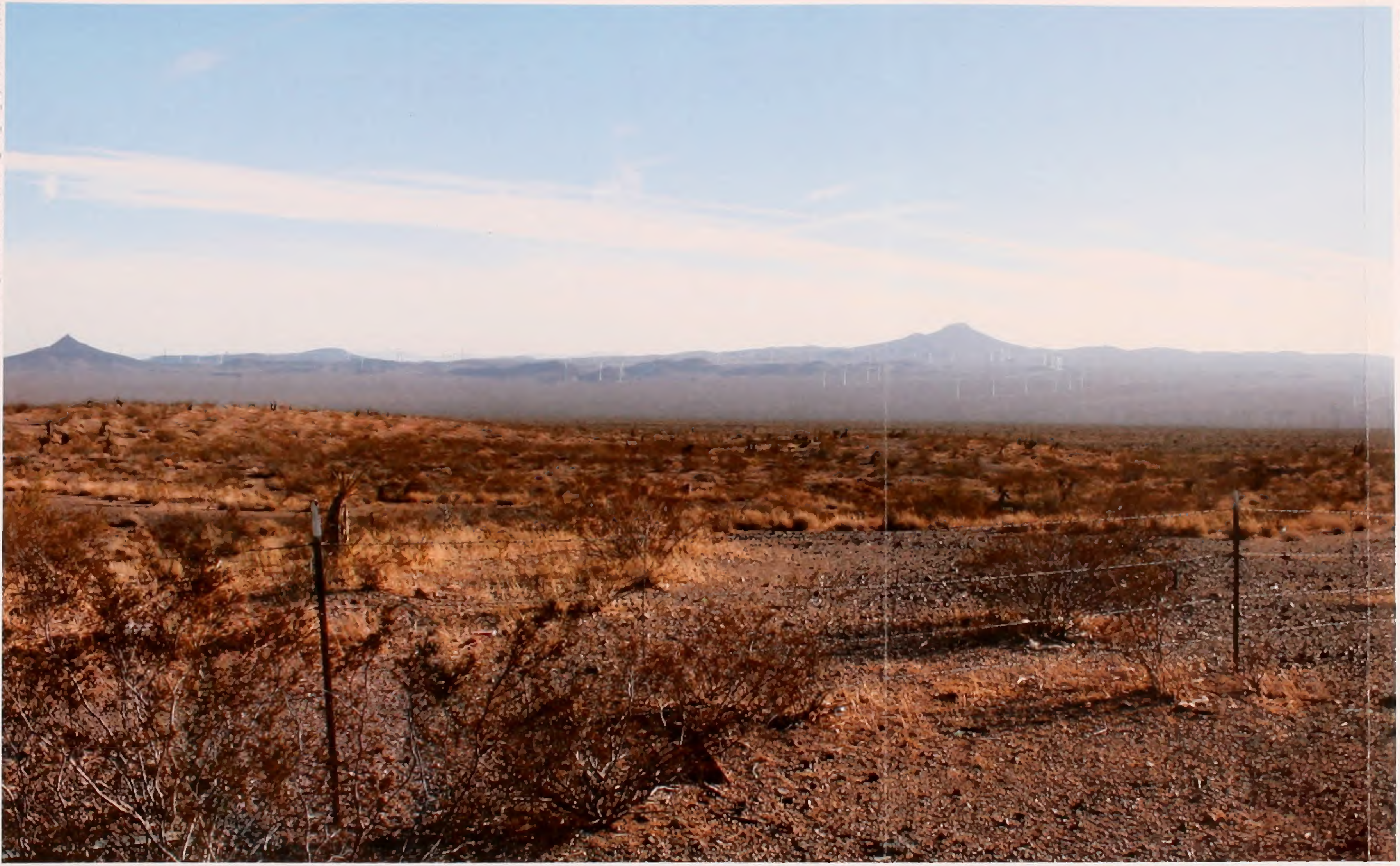
Simulation of Alternative A from Key Observation Point 1 US 93 at Householder Pass Backlit Conditions

Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-1(b)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



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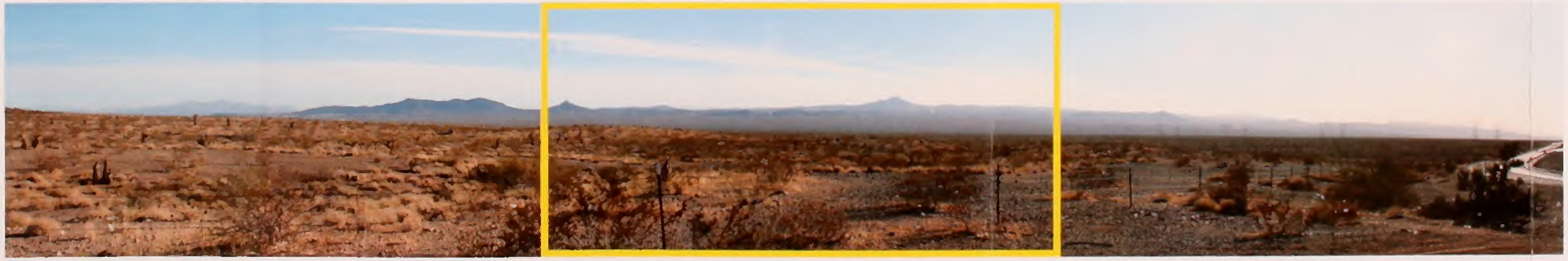
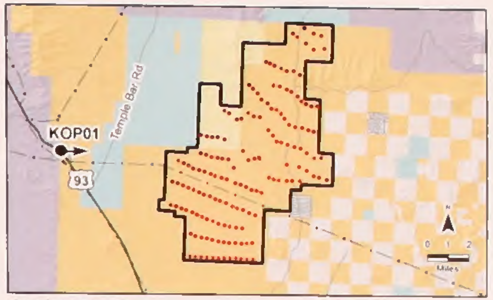




Viewpoint Location Map

Legend

- Key Observation Point
- ▭ Wind Farm Site
- · Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- 🟨 Bureau of Land Management
- 🟨 Bureau of Reclamation
- 🟪 National Park Service
- 🟦 State Trust Land
- Private Land

Photograph Information

Time of photograph:	10:27 AM
Date of photograph:	11-23-09
Weather condition:	Partly Cloudy
Viewing direction:	East
Latitude:	35°50'40.20"N
Longitude:	114°34'28.44"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Backlit
Nearest turbine:	5.4 Miles

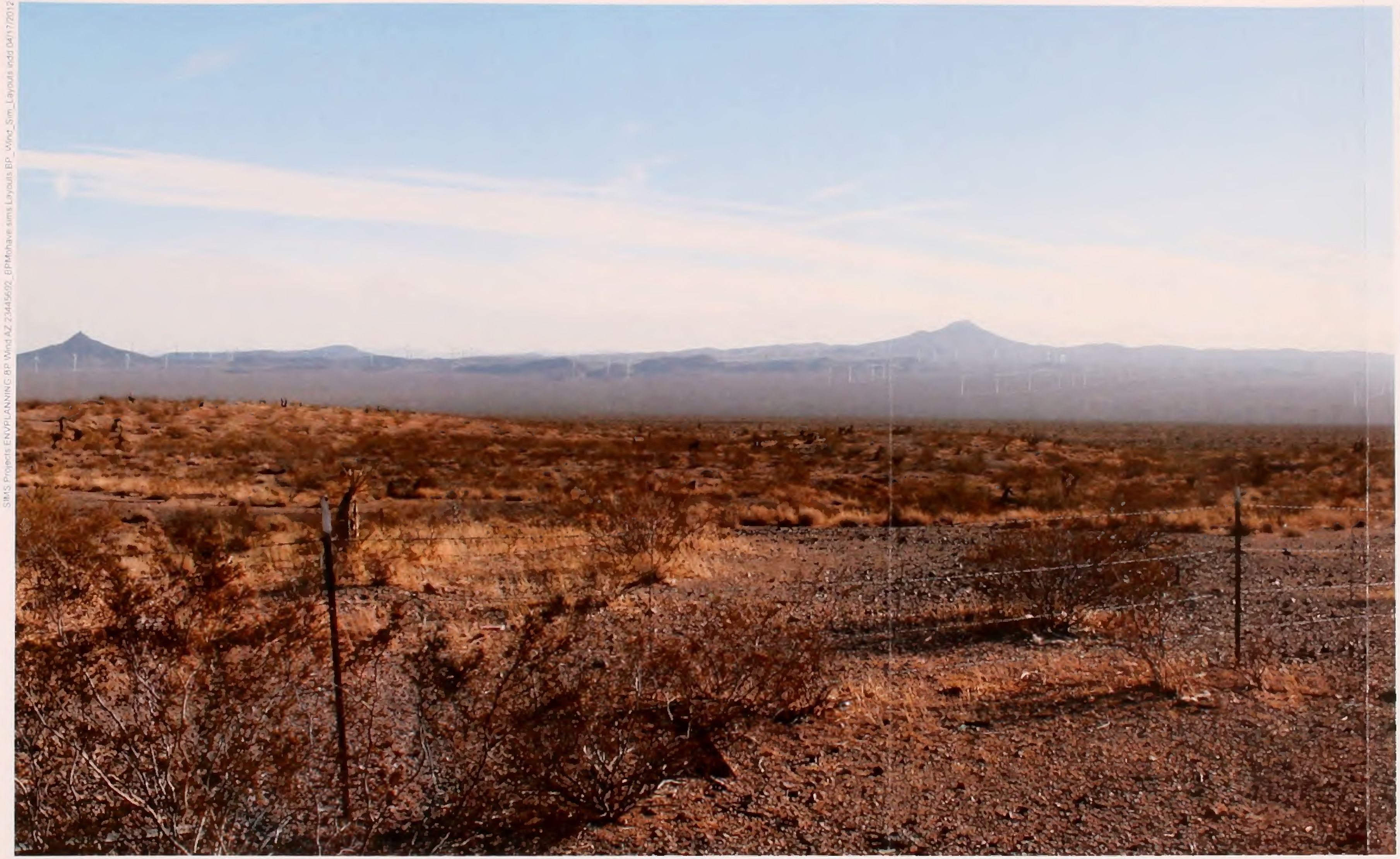
Simulation of Alternative B from Key Observation Point 1 US 93 at Householder Pass Backlit Conditions

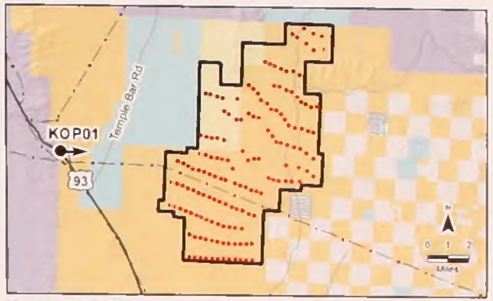
Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-1(c)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012





Viewpoint Location Map

Legend

- Key Observation Point
- ▭ Wind Farm Site
- · Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

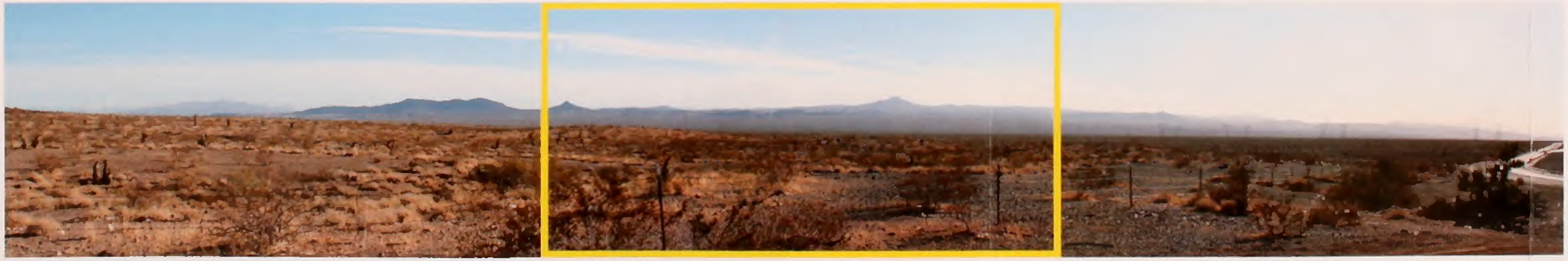
Surface Management

- 🟨 Bureau of Land Management
- 🟨 Bureau of Reclamation
- 🟪 National Park Service
- 🟦 State Trust Land
- Private Land

Photograph Information

Time of photograph:	10:27 AM
Date of photograph:	11-23-09
Weather condition:	Partly Cloudy
Viewing direction:	East
Latitude:	35°50'40.20"N
Longitude:	114°34'28.44"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Backlit
Nearest turbine:	5.4 Miles

Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



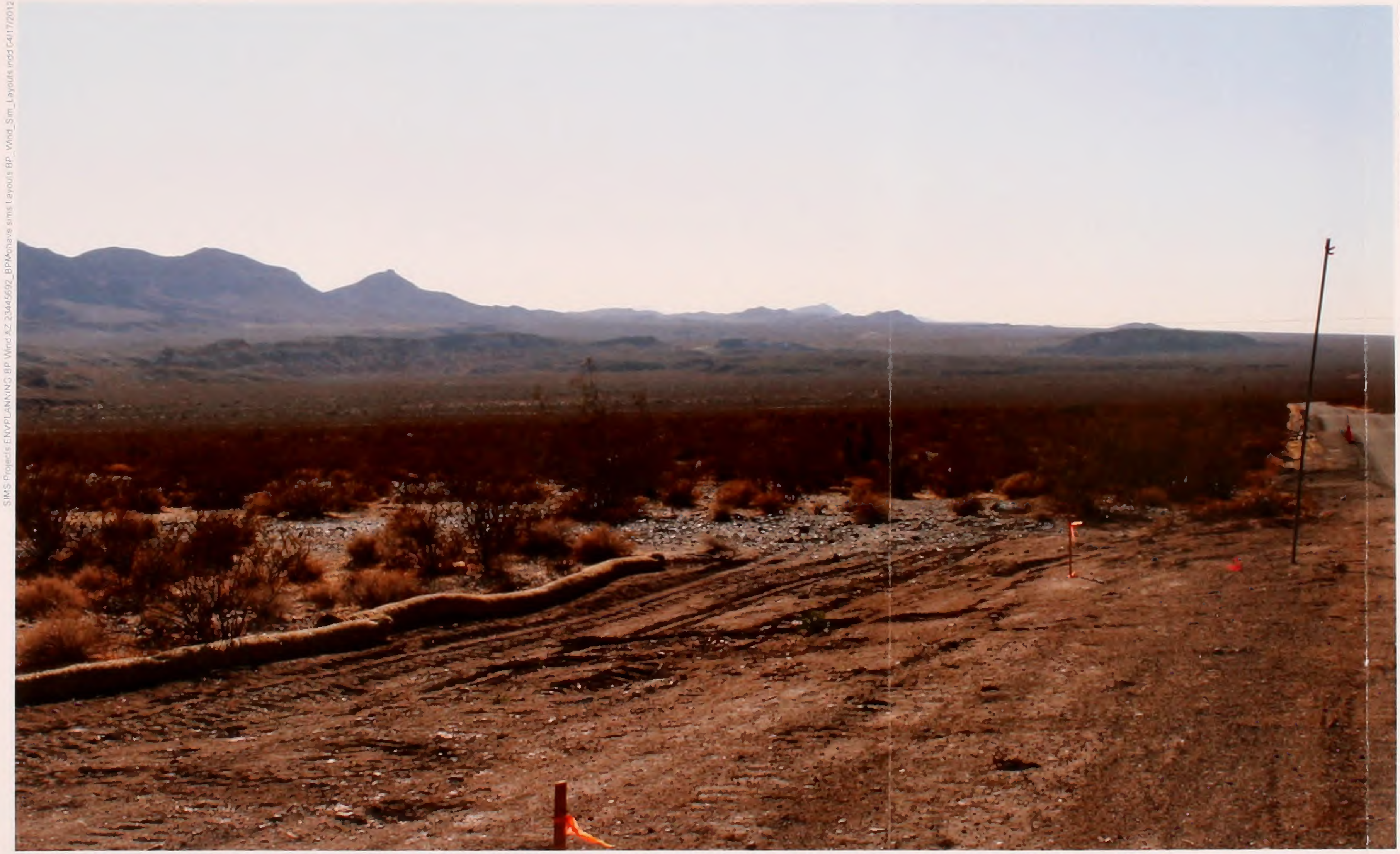
Simulation of Alternative C from Key Observation Point 1 US 93 at Householder Pass Backlit Conditions

Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-1(d)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



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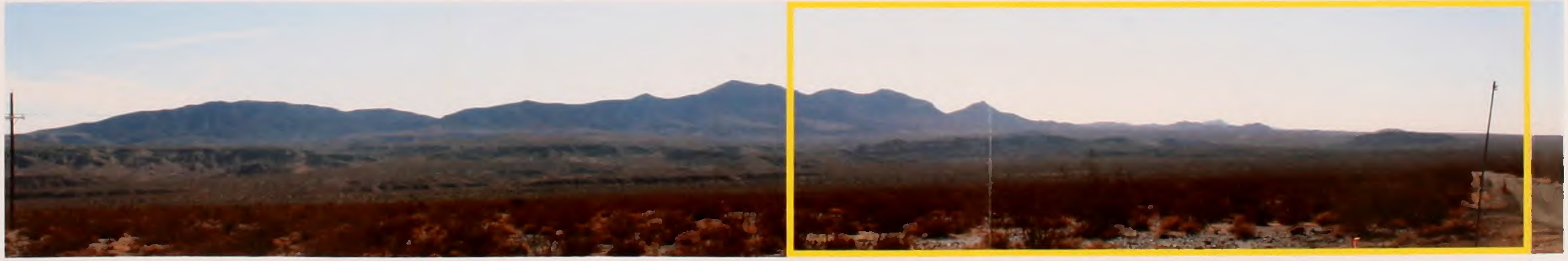
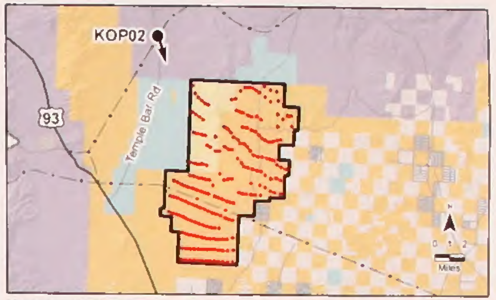




Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land
- State Boundary

Photograph Information

Time of photograph:	11:08 AM
Date of photograph:	11-23-09
Weather condition:	Clear
Viewing direction:	South
Latitude:	35°58'42.52"N
Longitude:	114°30'4.77"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Backlit
Nearest turbine:	NA

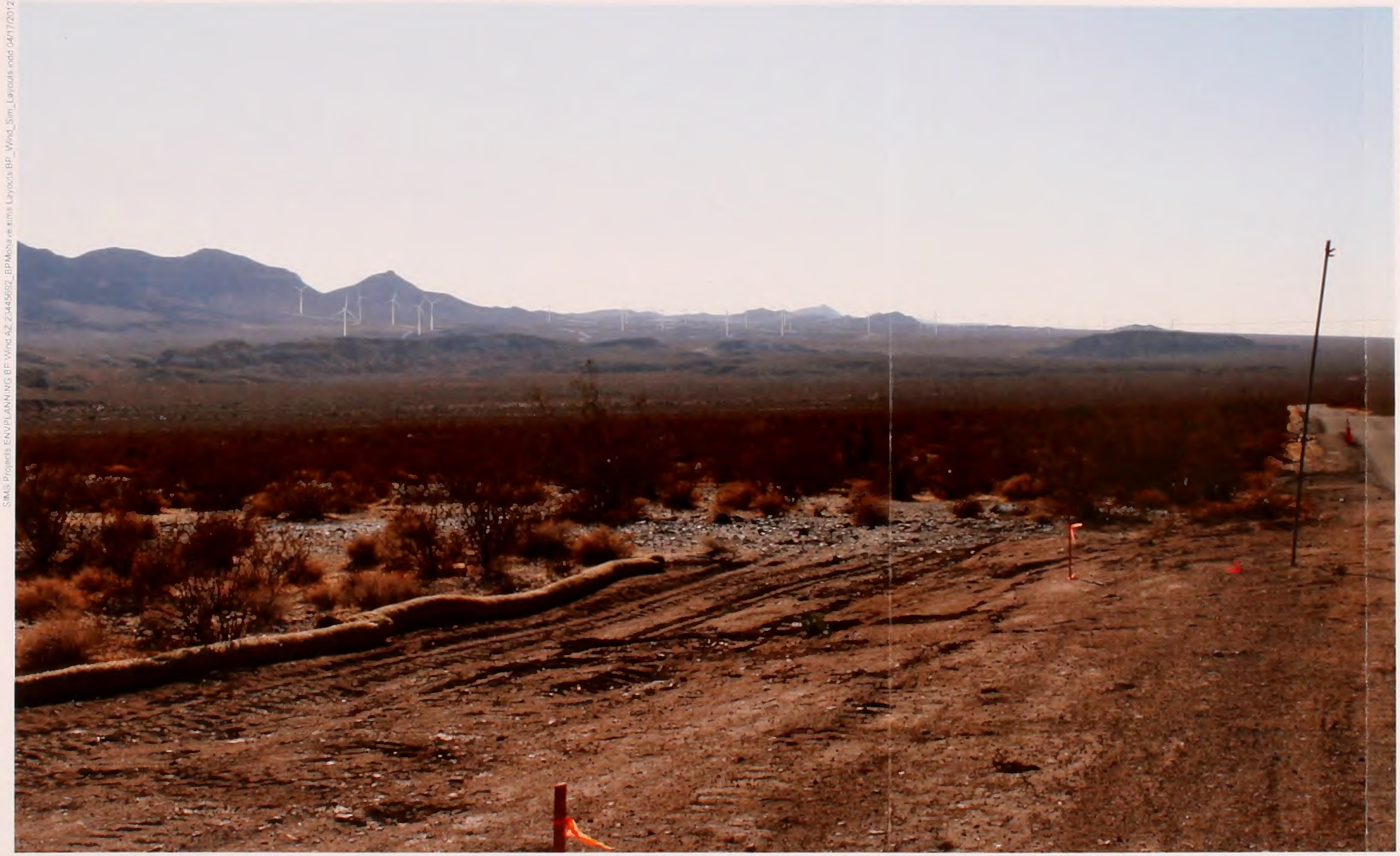
Existing Conditions
from Key Observation Point 2
Entrance to Lake Mead NRA
Backlit Conditions

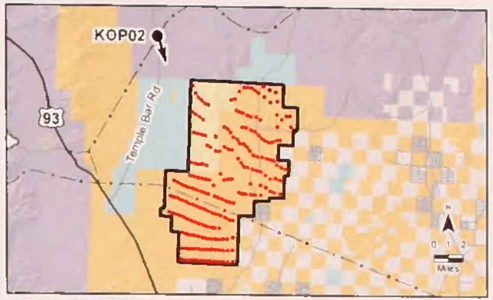
Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-2(a)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave.sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012





Viewpoint Location Map

Legend

- Key Observation Point
- ▭ Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

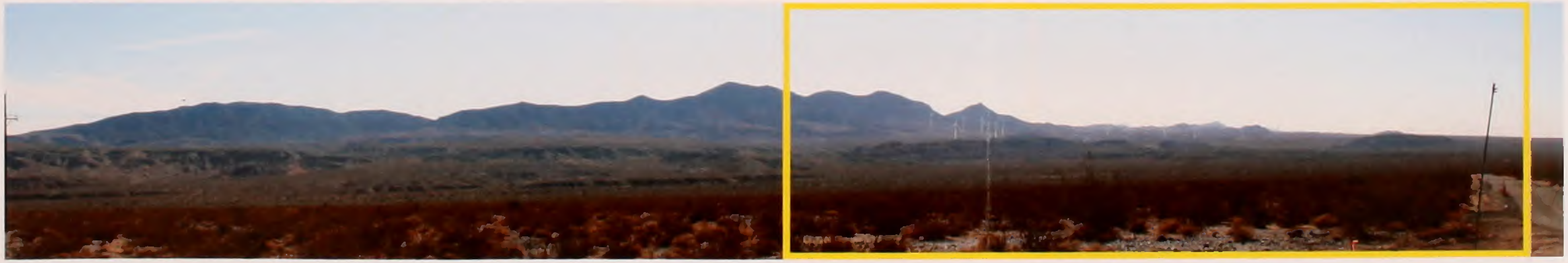
Surface Management

- 🟨 Bureau of Land Management
- 🟨 Bureau of Reclamation
- 🟪 National Park Service
- 🟦 State Trust Land
- Private Land
- ▭ State Boundary

Photograph Information

Time of photograph:	11:08 AM
Date of photograph:	11-23-09
Weather condition:	Clear
Viewing direction:	South
Latitude:	35°58'42.52"N
Longitude:	114°30'4.77"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Backlit
Nearest turbine:	3.9 Miles

Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



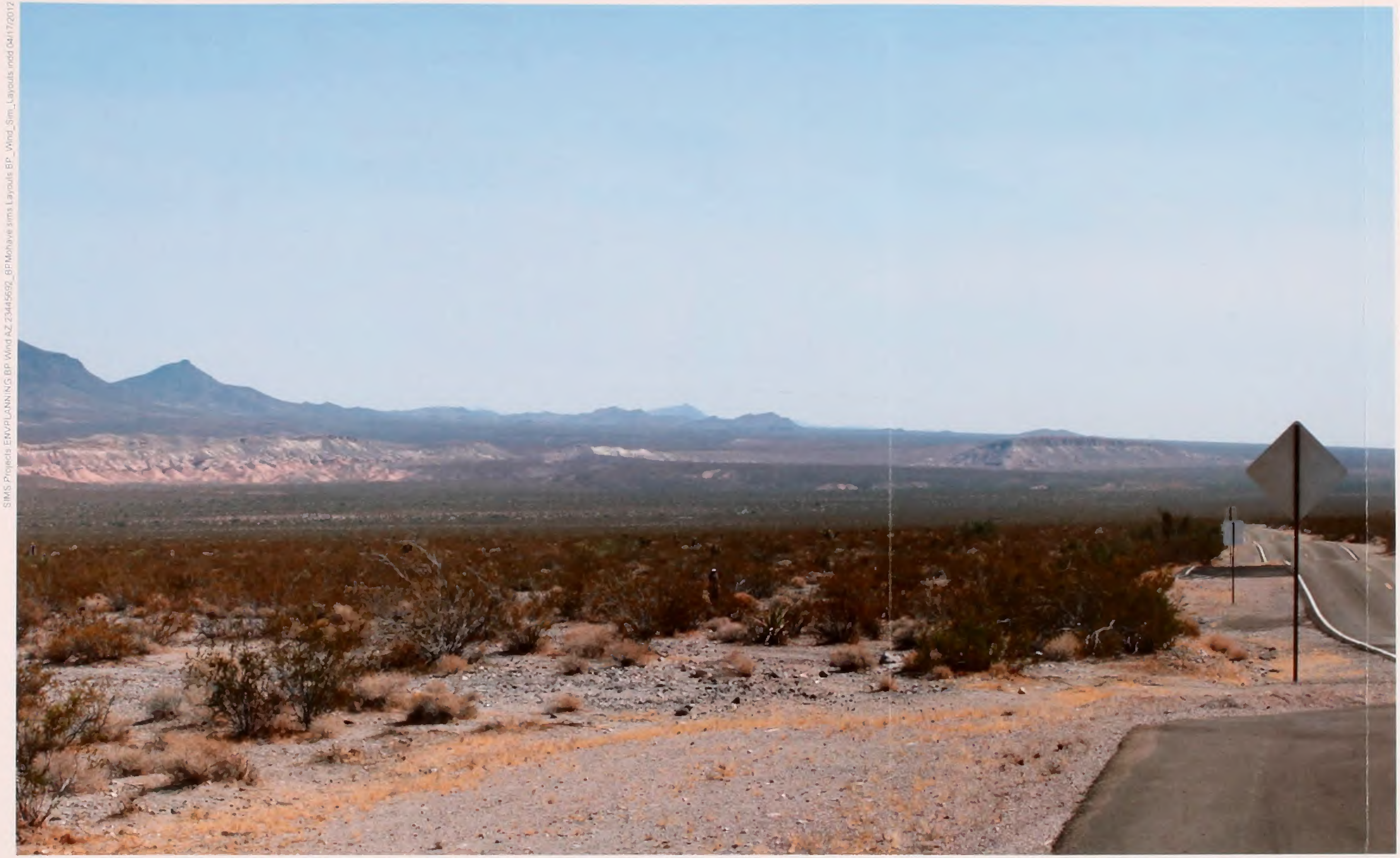
Simulation of Alternative A from Key Observation Point 2 Entrance to Lake Mead NRA Backlit Conditions

Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-2(b)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



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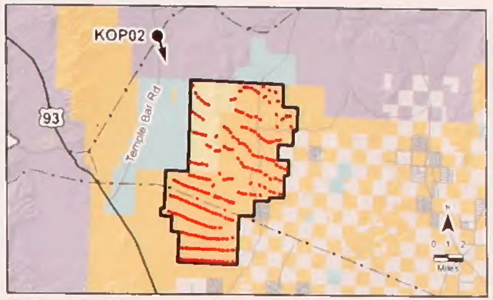


Viewpoint Location Map

Legend

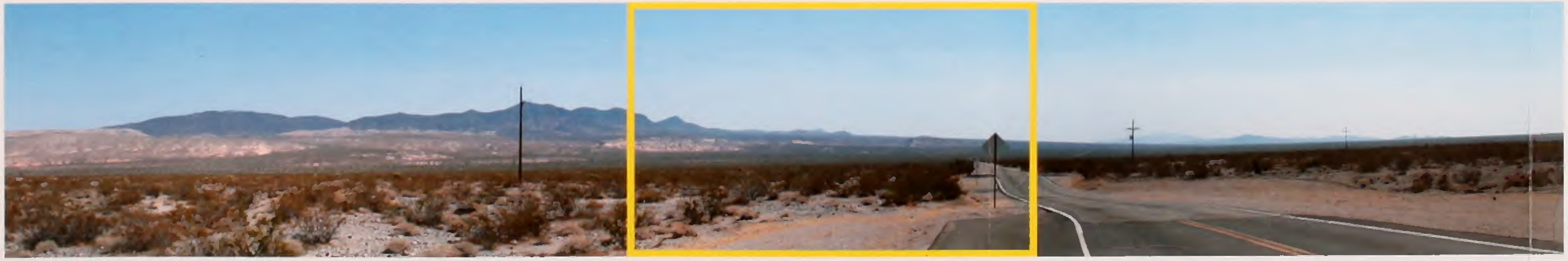
- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- 🟧 Bureau of Land Management
- 🟨 Bureau of Reclamation
- 🟪 National Park Service
- 🟦 State Trust Land
- Private Land
- ☐ State Boundary

Photograph Information

Time of photograph:	2:40 PM
Date of photograph:	9-7-11
Weather condition:	Clear
Viewing direction:	South
Latitude:	35°58'42.47"N
Longitude:	114°30'4.80"W
Camera:	Nikon D700
Lens:	50mm
Lighting condition:	Sidelit
Nearest turbine:	NA



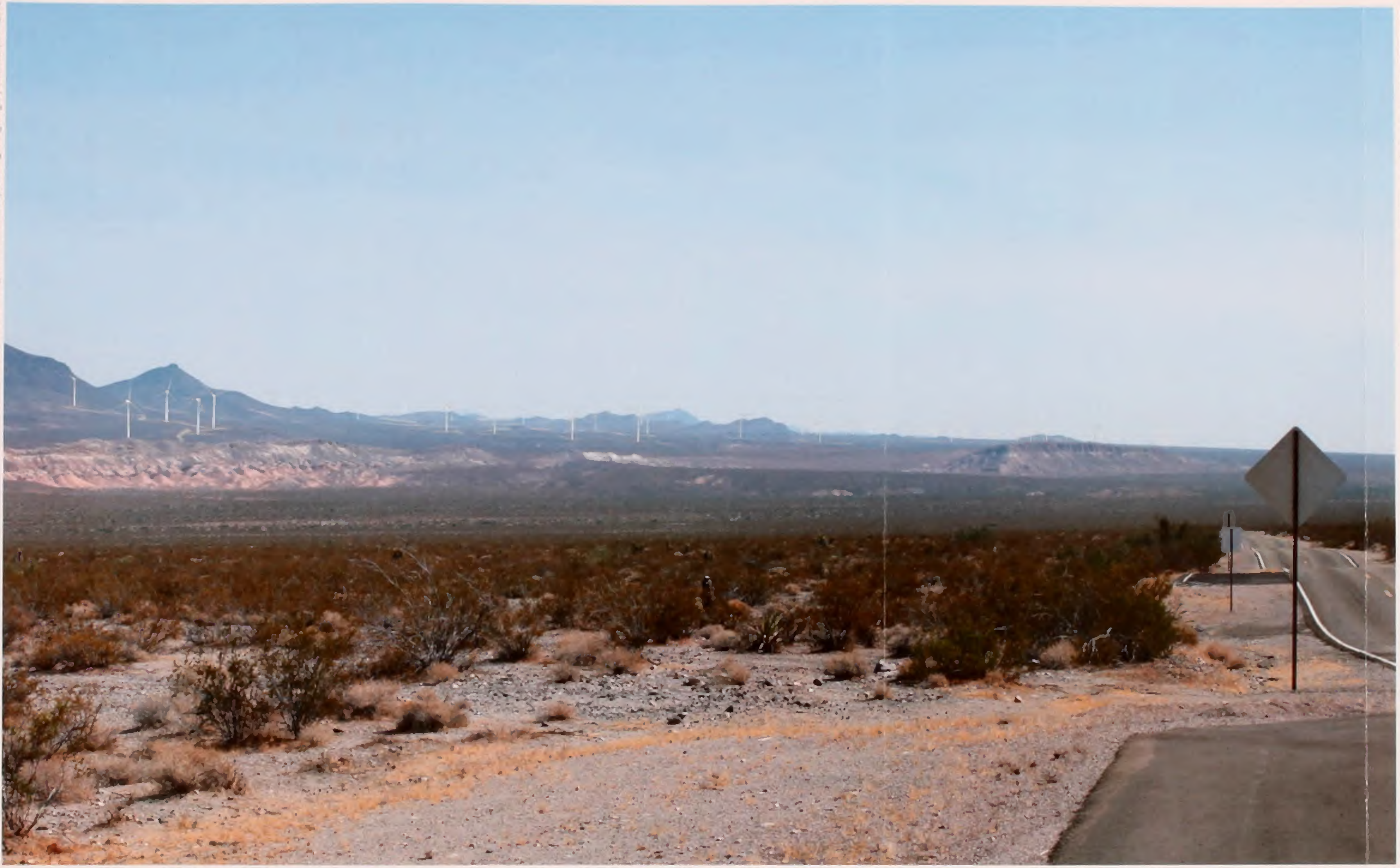
Existing Conditions from Key Observation Point 2 Entrance to Lake Mead NRA Sidelit Conditions

Mohave County Wind Project
Mohave County, Arizona

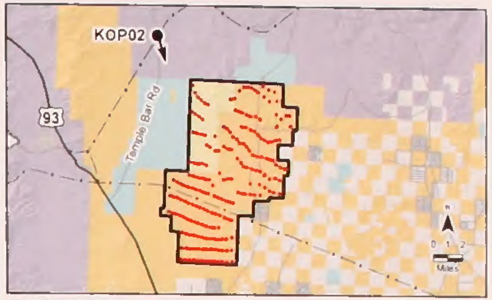
April 2012

Figure D-2(c)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Viewpoint Location Map

Legend

- Key Observation Point
- ▭ Wind Farm Site
- · Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- 🟧 Bureau of Land Management
- 🟨 Bureau of Reclamation
- 🟪 National Park Service
- 🟦 State Trust Land
- Private Land
- ▭ State Boundary

Photograph Information

Time of photograph:	2:40 PM
Date of photograph:	9-7-11
Weather condition:	Clear
Viewing direction:	South
Latitude:	35°58'42.47"N
Longitude:	114°30'4.80"W
Camera:	Nikon D700
Lens:	50mm
Lighting condition:	Sidelit
Nearest turbine:	3.9 Miles

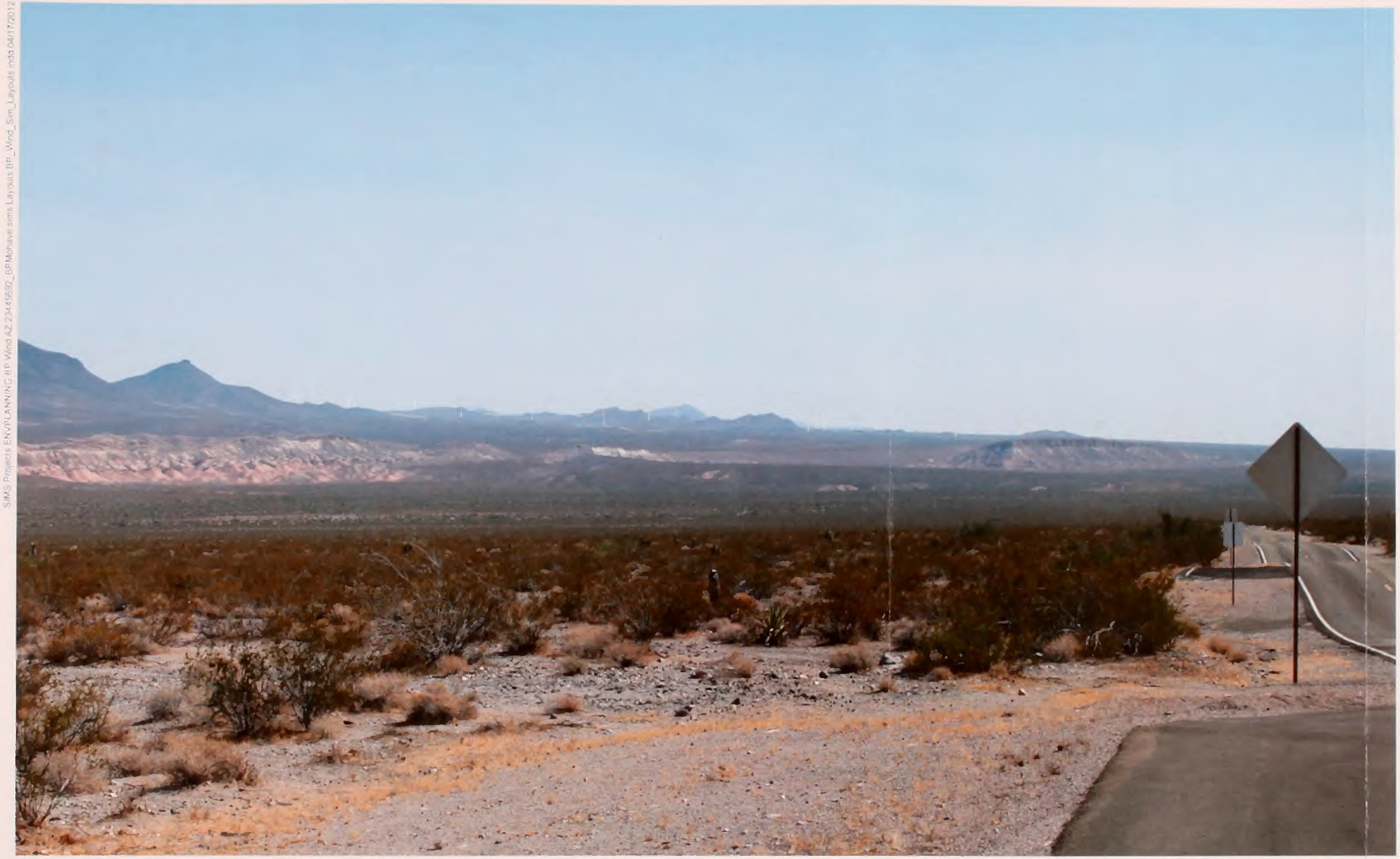
Simulation of Alternative A from Key Observation Point 2 Entrance to Lake Mead NRA Sidelit Conditions

Mohave County Wind Project
Mohave County, Arizona

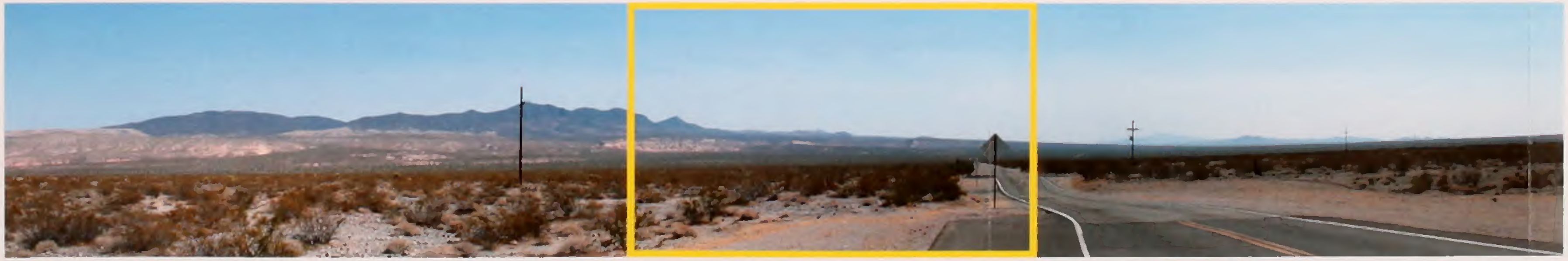
April 2012

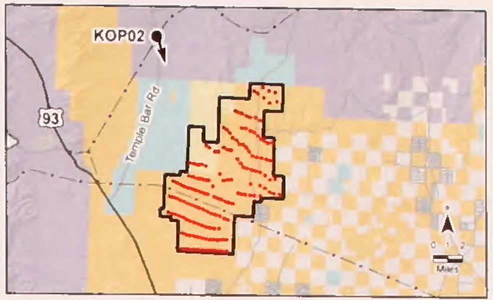
Figure D-2(d)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.





Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land
- State Boundary

Photograph Information

Time of photograph:	2:40 PM
Date of photograph:	9-7-11
Weather condition:	Clear
Viewing direction:	South
Latitude:	35°58'42.47"N
Longitude:	114°30'4.80"W
Camera:	Nikon D700
Lens:	50mm
Lighting condition:	Sidelit
Nearest turbine:	7.0 Miles

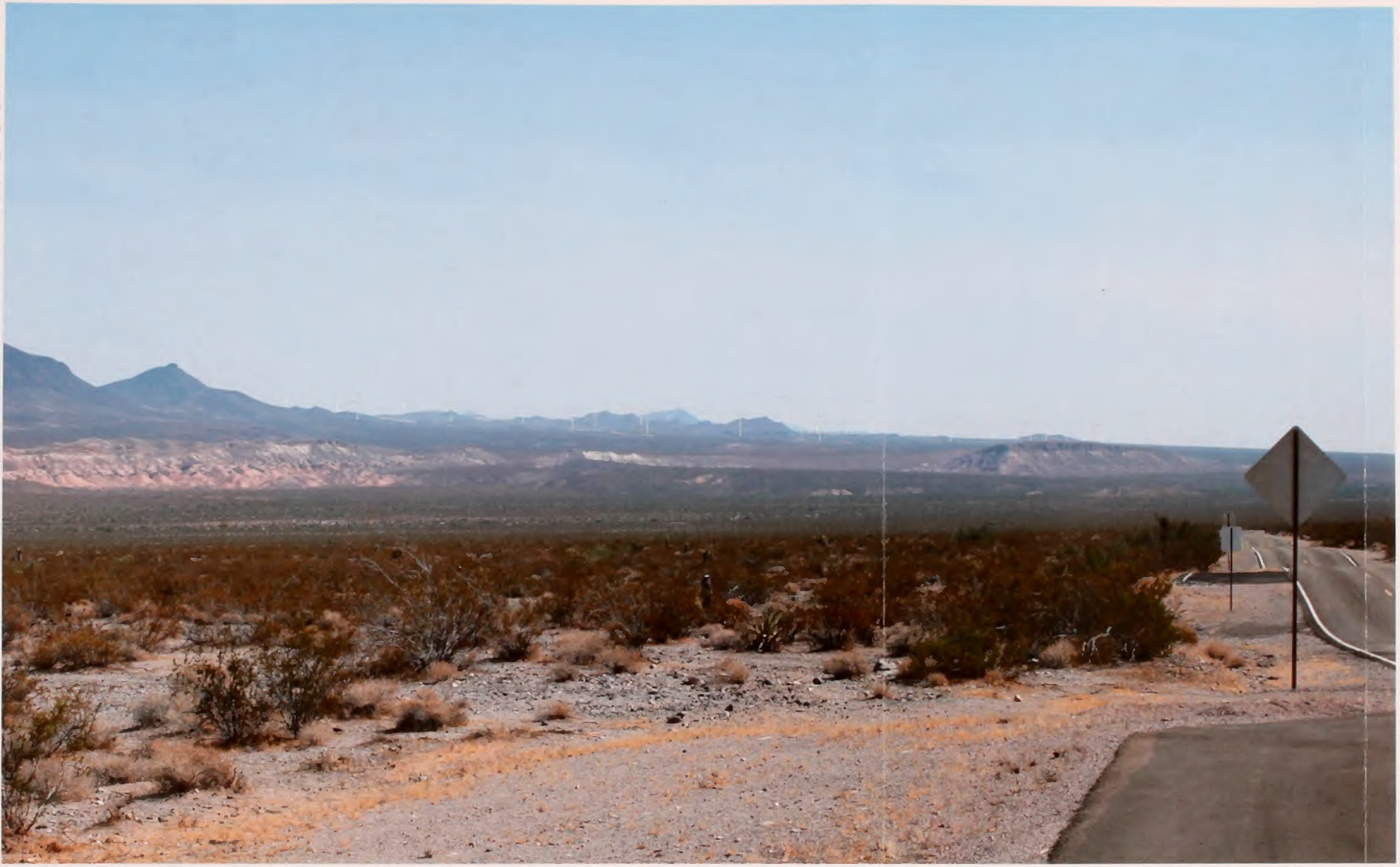
Simulation of Alternative B from Key Observation Point 2 Entrance to Lake Mead NRA Sidelit Conditions

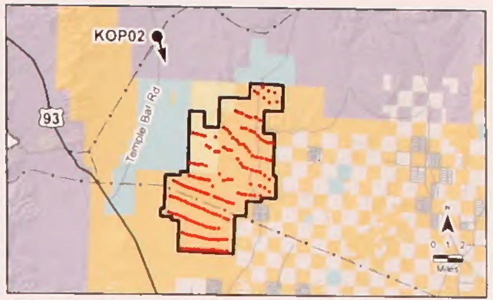
Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-2(e)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012





Viewpoint Location Map

Legend

- Key Observation Point
- ▭ Wind Farm Site
- · Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

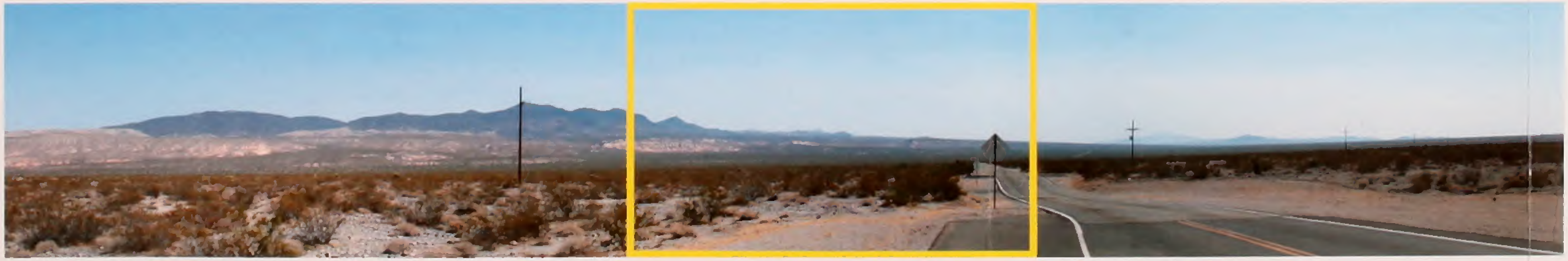
Surface Management

- 🟧 Bureau of Land Management
- 🟨 Bureau of Reclamation
- 🟪 National Park Service
- 🟦 State Trust Land
- Private Land
- ▭ State Boundary

Photograph Information

Time of photograph:	2:40 PM
Date of photograph:	9-7-11
Weather condition:	Clear
Viewing direction:	South
Latitude:	35°58'42.47"N
Longitude:	114°30'4.80"W
Camera:	Nikon D700
Lens:	50mm
Lighting condition:	Sidlit
Nearest turbine:	6.7 Miles

Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



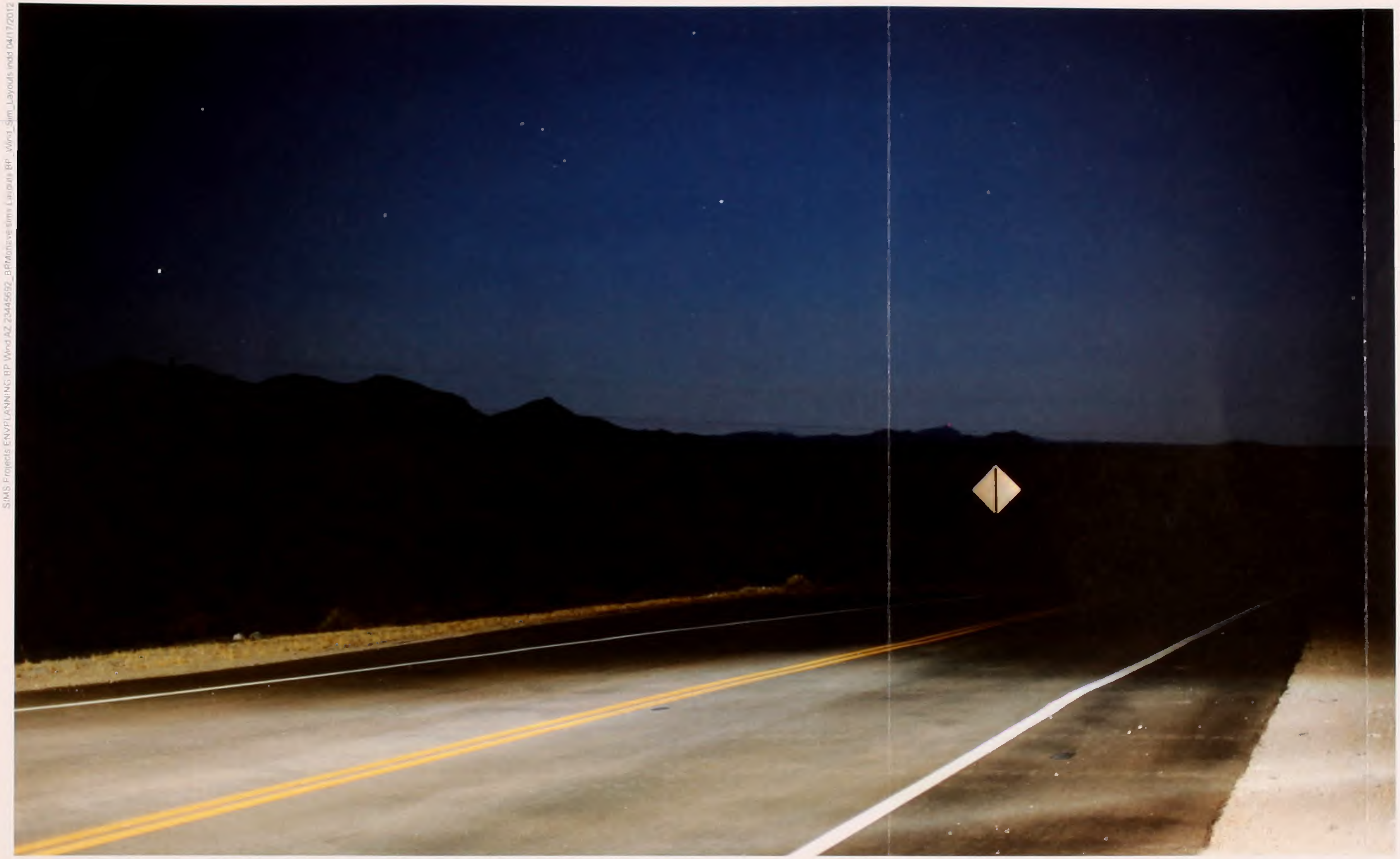
Simulation of Alternative C from Key Observation Point 2 Entrance to Lake Mead NRA Sidelit Conditions

Mohave County Wind Project
Mohave County, Arizona

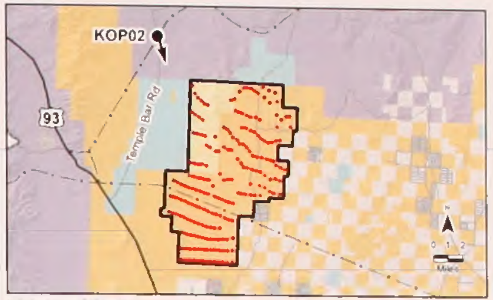
April 2012

Figure D-2(f)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper.



Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land
- State Boundary

Photograph Information

Time of photograph:	8:56 PM
Date of photograph:	9-6-11
Weather condition:	Clear
Viewing direction:	South
Latitude:	35°58'42.52"N
Longitude:	114°30'4.77"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Nighttime
Nearest turbine:	NA

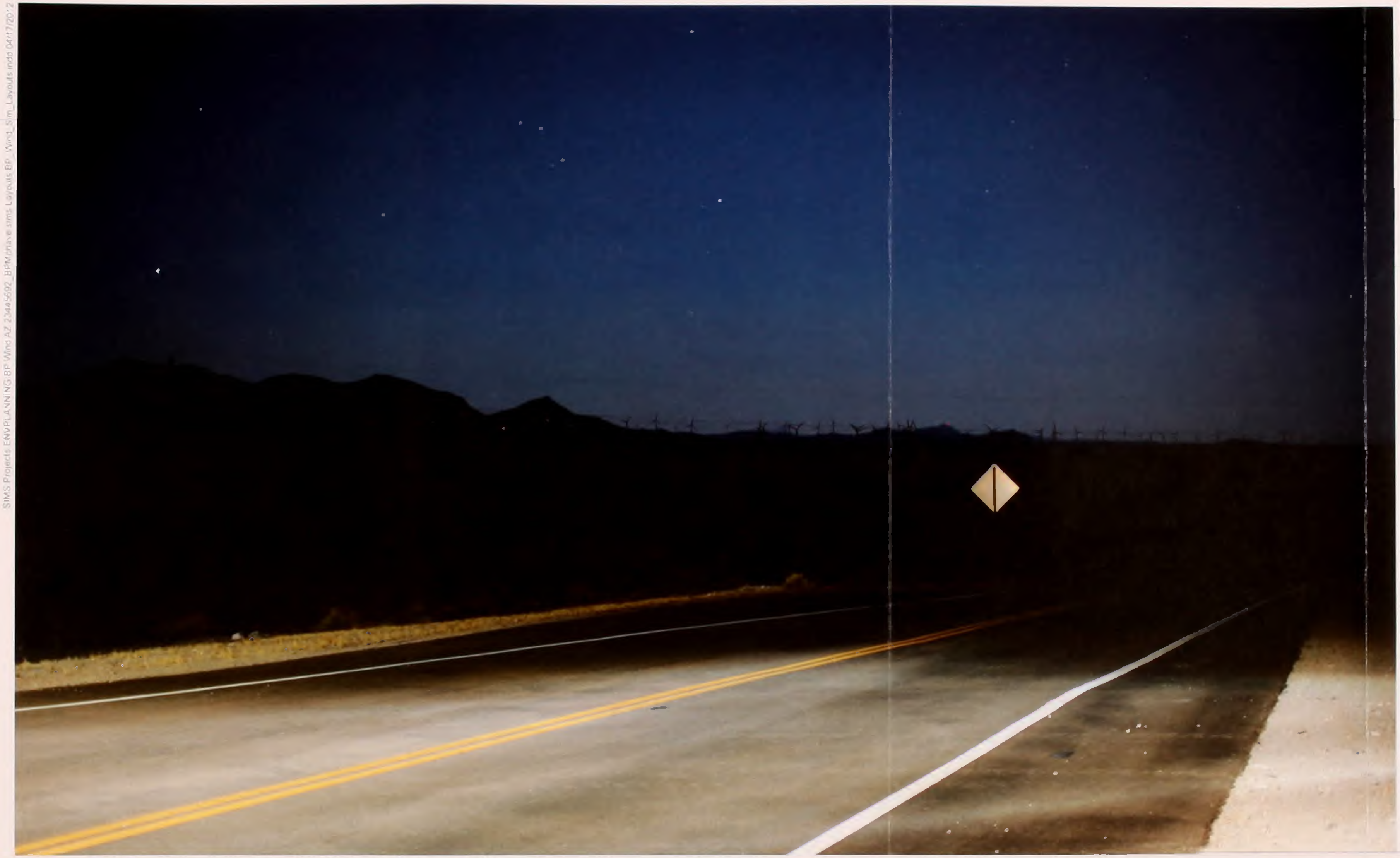
Existing Conditions from Key Observation Point 2 Entrance to Lake Mead NRA Nighttime Conditions

Mohave County Wind Project
Mohave County, Arizona

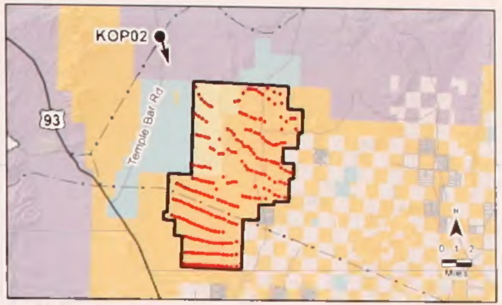
April 2012

Figure D-2(g)

SIMS Projects ENVPLANNING BP Wind AZ 23445592_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper.



Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land
- State Boundary

Photograph Information

Time of photograph:	8:56 PM
Date of photograph:	9-6-11
Weather condition:	Clear
Viewing direction:	South
Latitude:	35°58'42.52"N
Longitude:	114°30'4.77"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Nighttime
Nearest turbine:	3.9 Miles

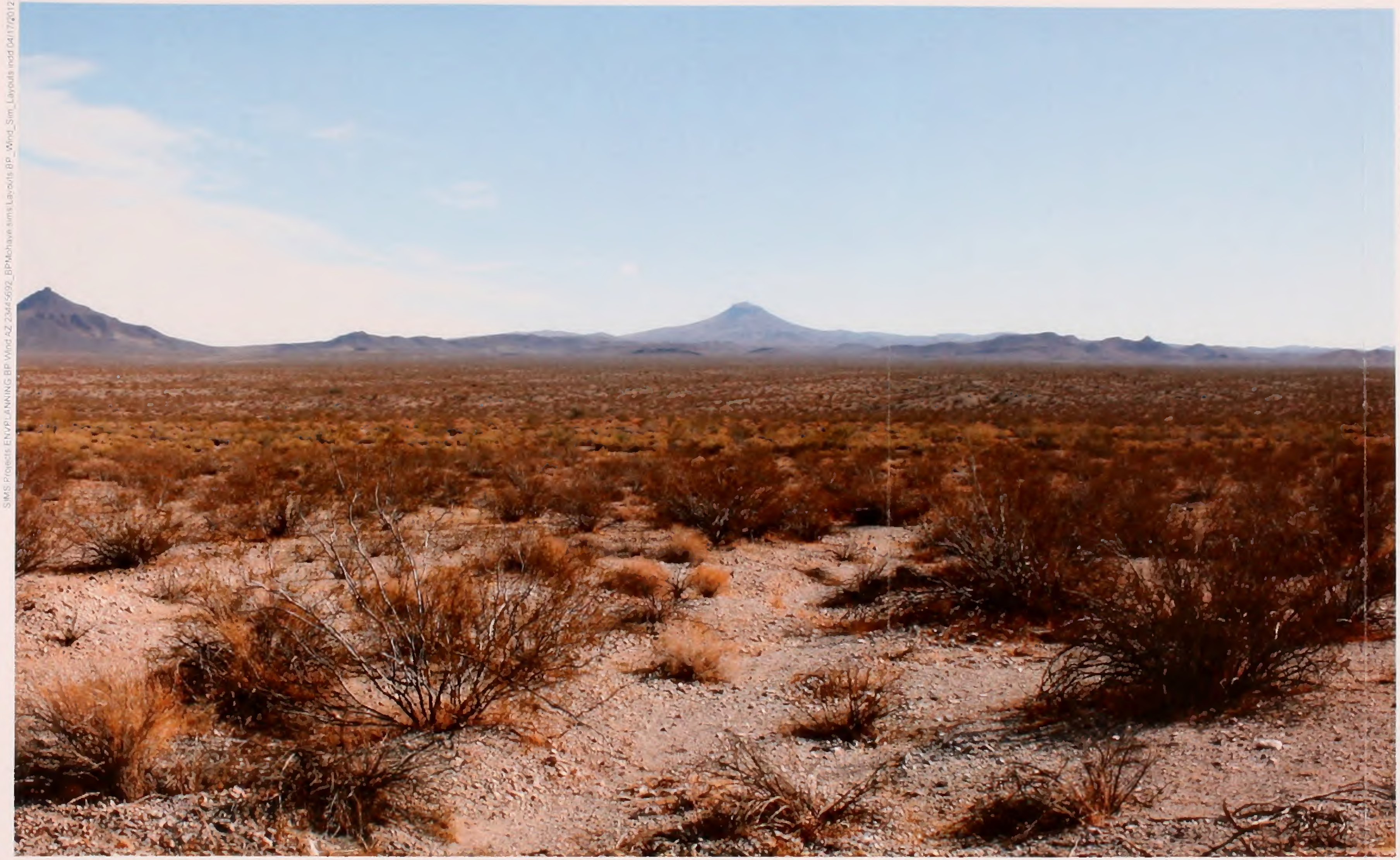
Simulation of Alternative A from Key Observation Point 2 Entrance to Lake Mead NRA Nighttime Conditions

Mohave County Wind Project
Mohave County, Arizona

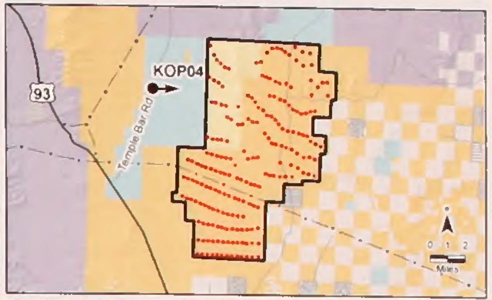
April 2012

Figure D-2(h)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Viewpoint Location Map

Legend

- ● Key Observation Point
- ▭ Wind Farm Site
- • Proposed Wind Turbine Layout
- -·- Transmission Line
- — U.S. Highway
- — Road

Surface Management

- 🟧 Bureau of Land Management
- 🟨 Bureau of Reclamation
- 🟪 National Park Service
- 🟦 State Trust Land
- ☐ Private Land

Photograph Information

Time of photograph:	12:17 PM
Date of photograph:	11-23-09
Weather condition:	Partly Cloudy
Viewing direction:	East
Latitude:	35°53'46.96"N
Longitude:	114°30'48.56"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Sidelit
Nearest turbine:	NA

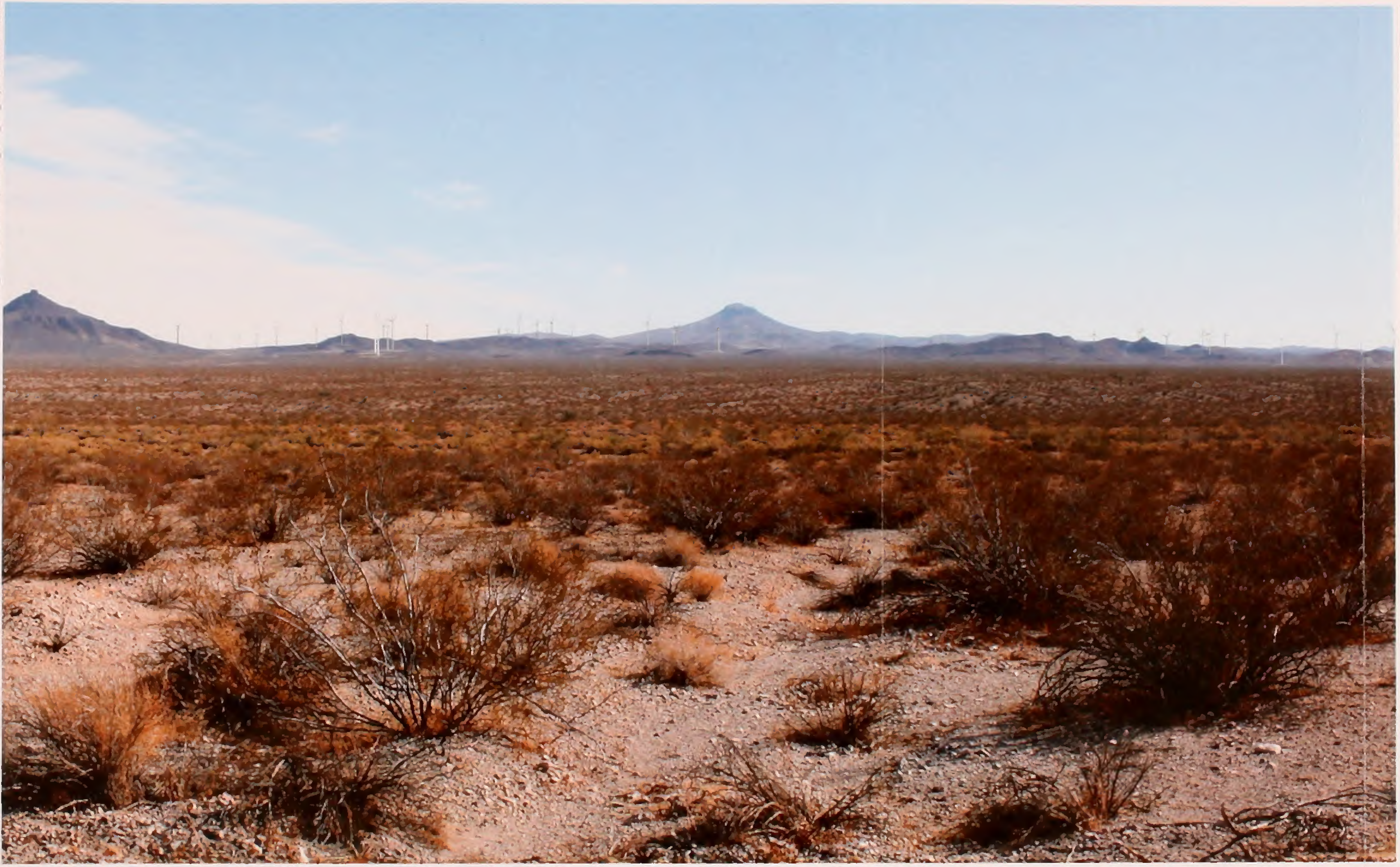
Existing Conditions
from Key Observation Point 4
Temple Bar Road
Sidelit Conditions

Mohave County Wind Project
Mohave County, Arizona

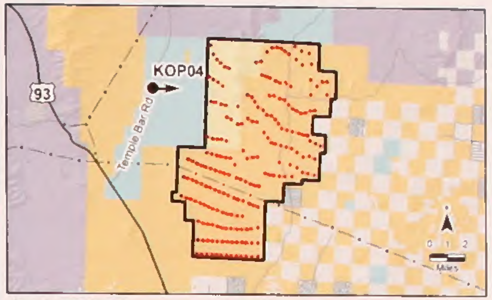
April 2012

Figure D-3(a)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Viewpoint Location Map

Legend

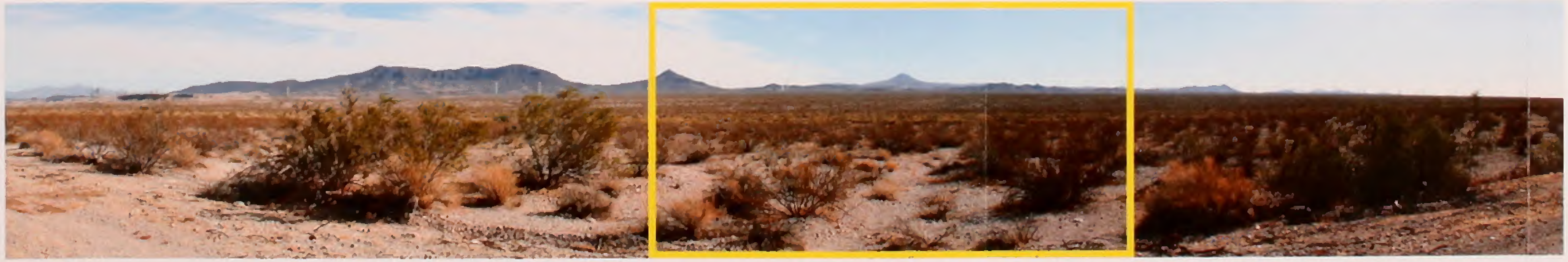
- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land

Photograph Information

Time of photograph:	12:17 PM
Date of photograph:	11-23-09
Weather condition:	Partly Cloudy
Viewing direction:	East
Latitude:	35°53'46.96"N
Longitude:	114°30'48.56"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Sidelit
Nearest turbine:	3.3 Miles



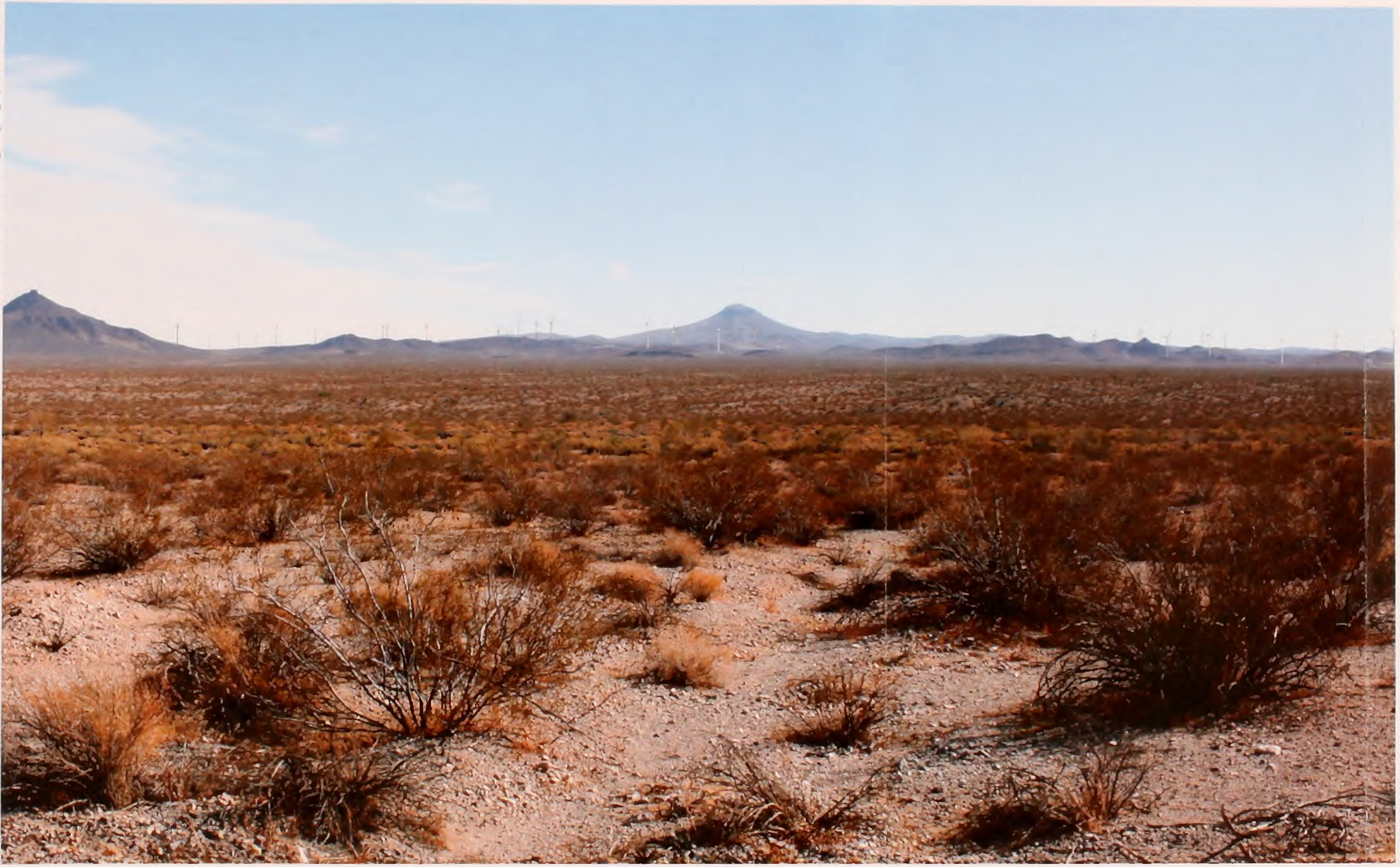
Simulation of Alternative A
from Key Observation Point 4
Temple Bar Road
Sidelit Conditions

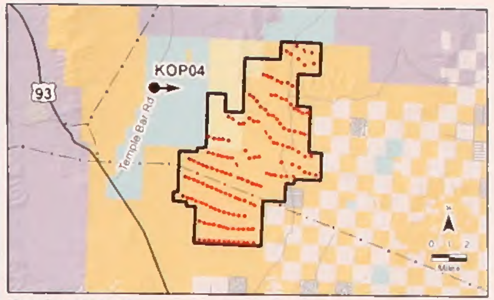
Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-3(b)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012





Viewpoint Location Map

Legend

- Key Observation Point
- ▭ Wind Farm Site
- · Proposed Wind Turbine Layout
- -·- Transmission Line
- — U.S. Highway
- — Road

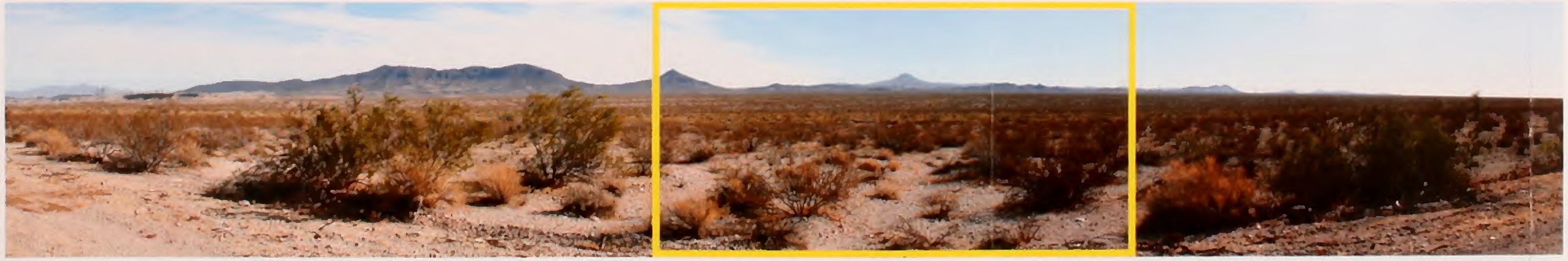
Surface Management

- 🟨 Bureau of Land Management
- 🟨 Bureau of Reclamation
- 🟪 National Park Service
- 🟦 State Trust Land
- Private Land

Photograph Information

Time of photograph:	12:17 PM
Date of photograph:	11-23-09
Weather condition:	Partly Cloudy
Viewing direction:	East
Latitude:	35°53'46.96"N
Longitude:	114°30'48.56"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Sidelit
Nearest turbine:	3.8 Miles

Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



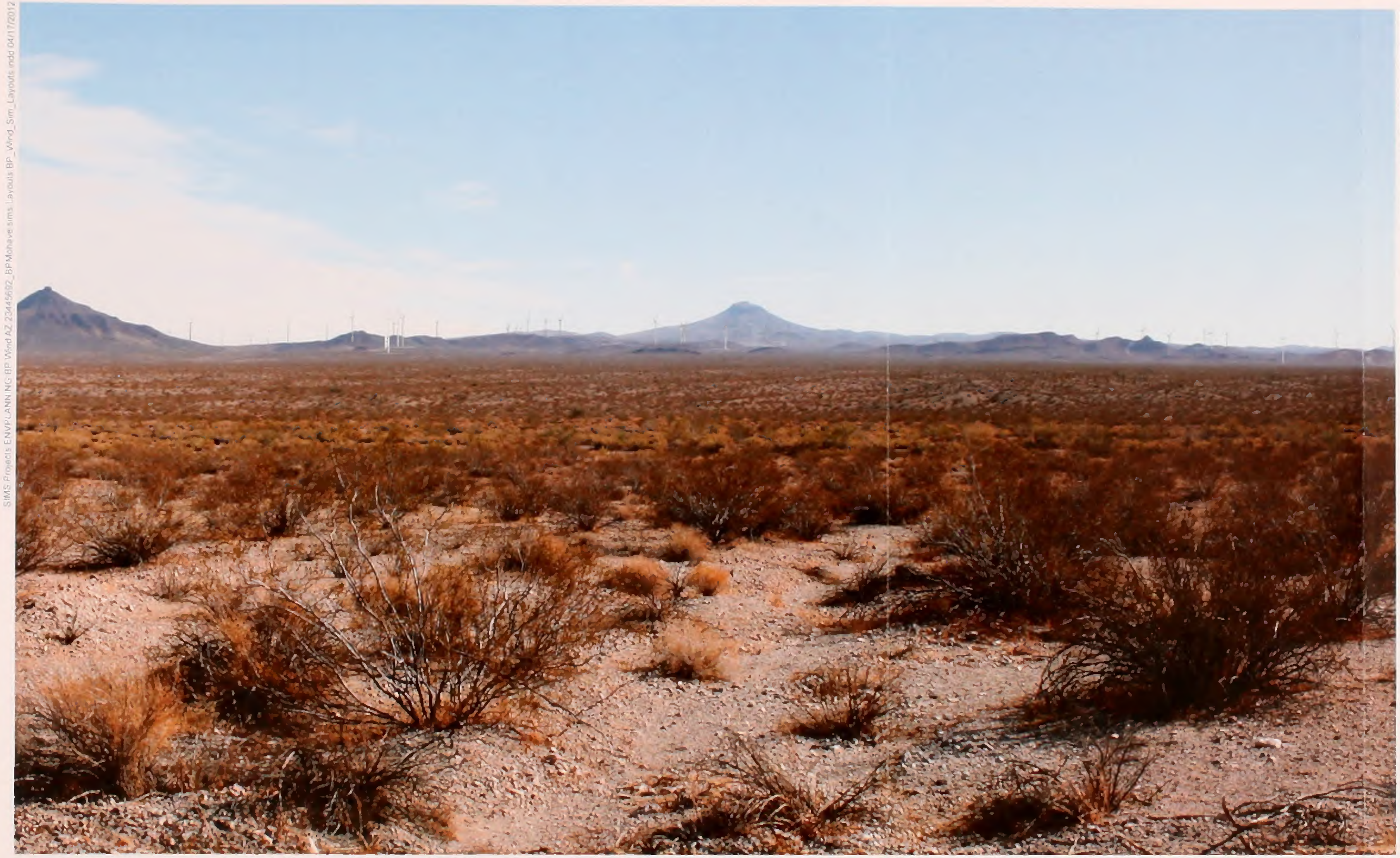
Simulation of Alternative B from Key Observation Point 4 Temple Bar Road Sidelit Conditions

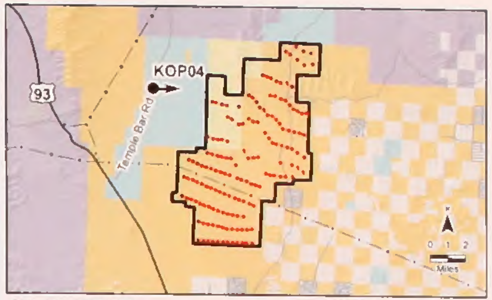
Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-3(c)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012





Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

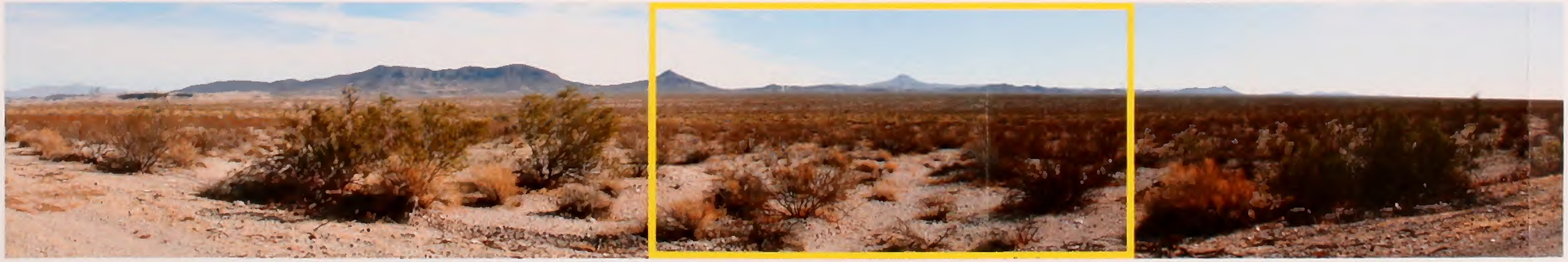
Surface Management

- 🟨 Bureau of Land Management
- 🟨 Bureau of Reclamation
- 🟪 National Park Service
- 🟦 State Trust Land
- ⬜ Private Land

Photograph Information

Time of photograph:	12:17 PM
Date of photograph:	11-23-09
Weather condition:	Partly Cloudy
Viewing direction:	East
Latitude:	35°53'46.96"N
Longitude:	114°30'48.56"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Sidelit
Nearest turbine:	3.3 Miles

Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



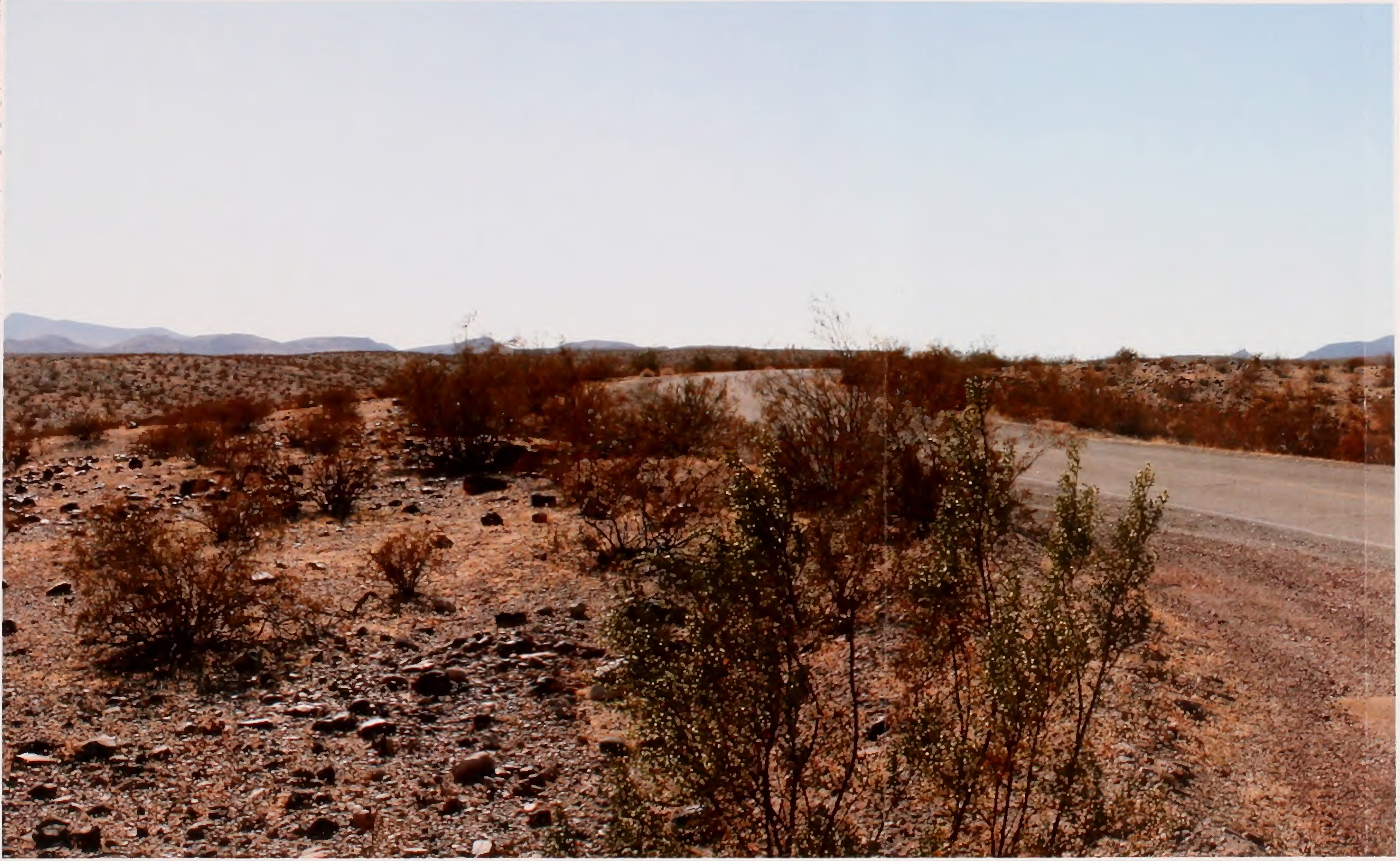
Simulation of Alternative C
from Key Observation Point 4
Temple Bar Road
Sidelit Conditions

Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-3(d)

SIMS Projects ENVPLANNING BP Wind AZ 23445592_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



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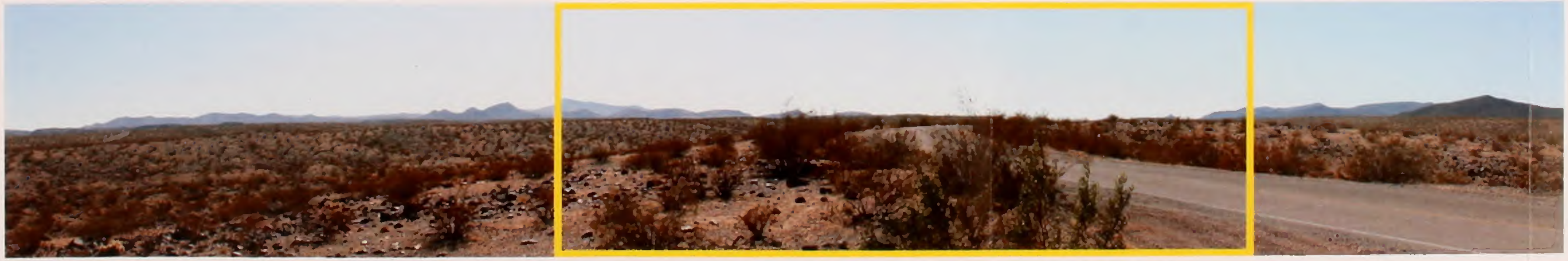
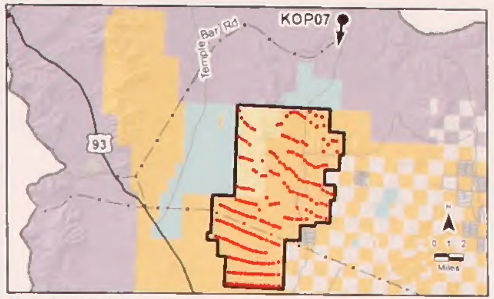




Viewpoint Location Map

Legend

- ● Key Observation Point
- ▭ Wind Farm Site
- · Proposed Wind Turbine Layout
- -·-·- Transmission Line
- — U.S. Highway
- — Road

Surface Management

- 🟧 Bureau of Land Management
- 🟨 Bureau of Reclamation
- 🟪 National Park Service
- 🟦 State Trust Land
- Private Land
- ▭ State Boundary

Photograph Information

Time of photograph:	1:20 PM
Date of photograph:	11-23-09
Weather condition:	Clear
Viewing direction:	South
Latitude:	36°1'27.02"N
Longitude:	114°20'12.53"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Backlit
Nearest turbine:	NA

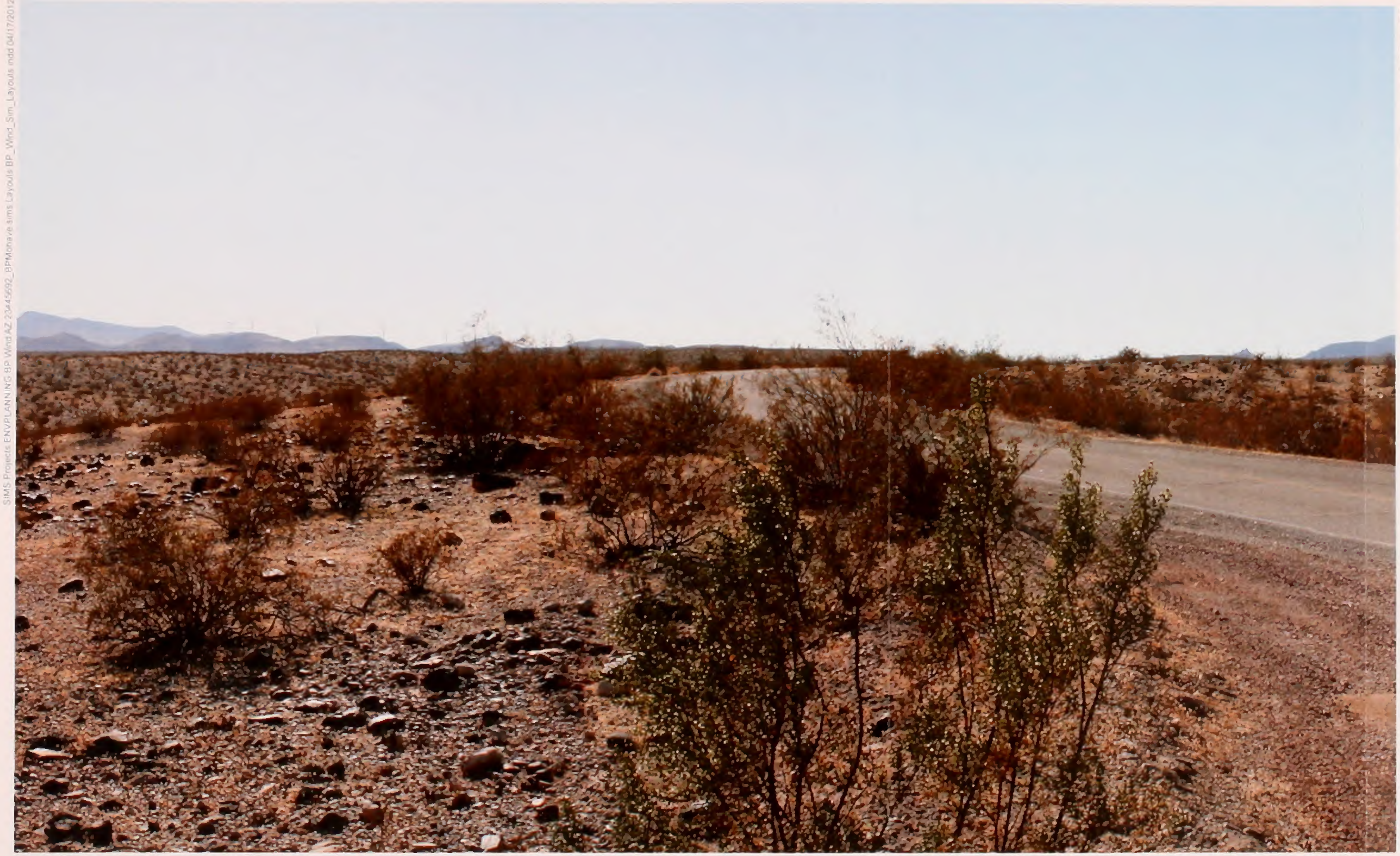
Existing Conditions from Key Observation Point 7 Kiosk in Temple Basin Backlit Conditions

Mohave County Wind Project
Mohave County, Arizona

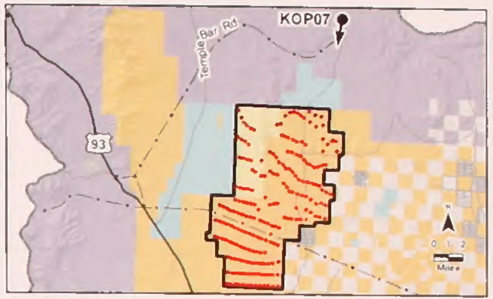
April 2012

Figure D-4(a)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land
- State Boundary

Photograph Information

Time of photograph:	1:20 PM
Date of photograph:	11-23-09
Weather condition:	Clear
Viewing direction:	South
Latitude:	36°1'27.02"N
Longitude:	114°20'12.53"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Backlit
Nearest turbine:	6.5 Miles

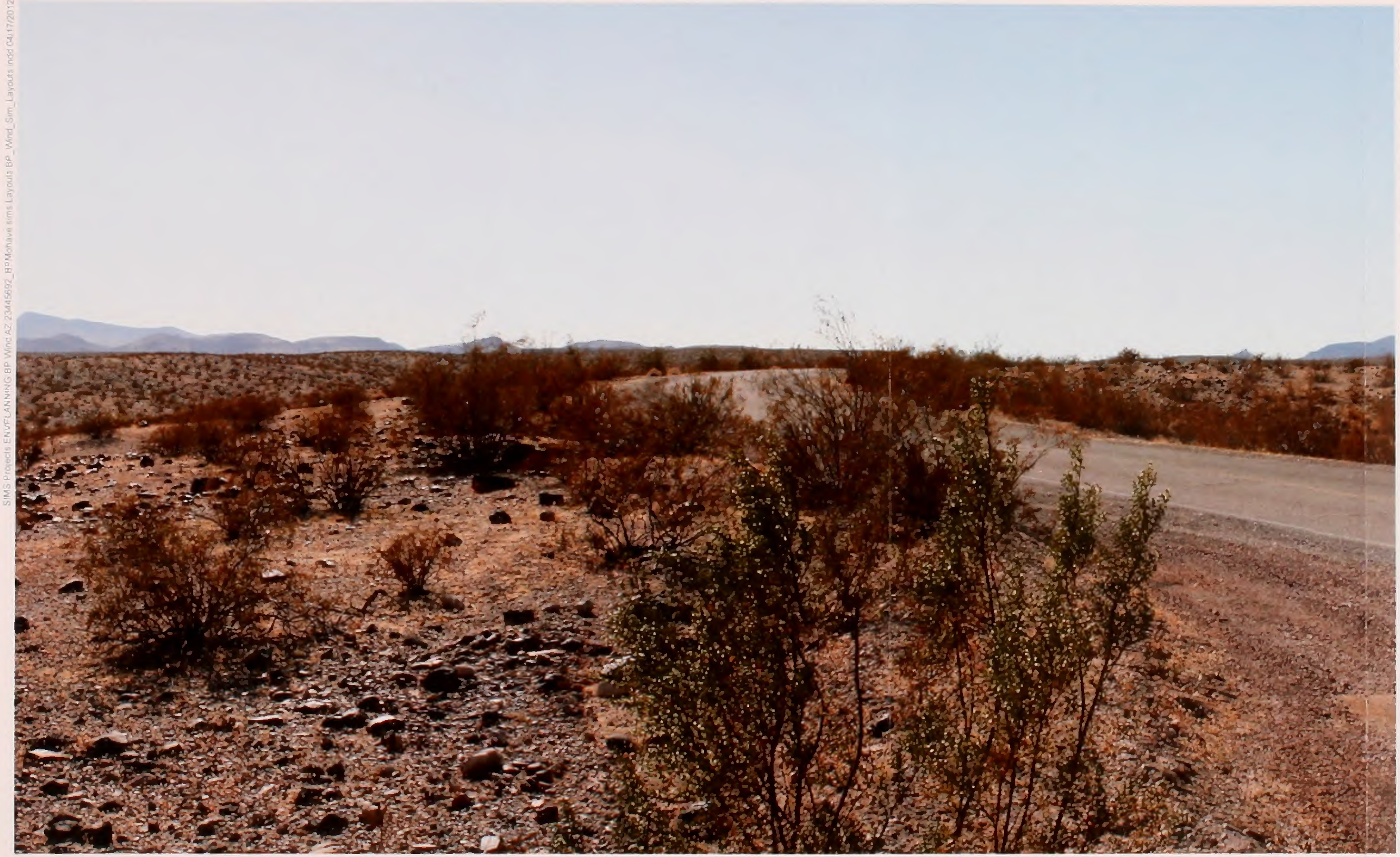
Simulation of Alternative A from Key Observation Point 7 Kiosk in Temple Basin Backlit Conditions

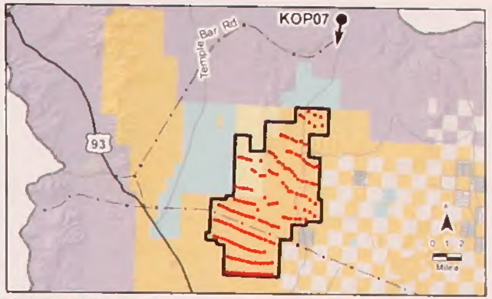
Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-4(b)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts indd 04/17/2012





Viewpoint Location Map

Legend

- Key Observation Point
- ▭ Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

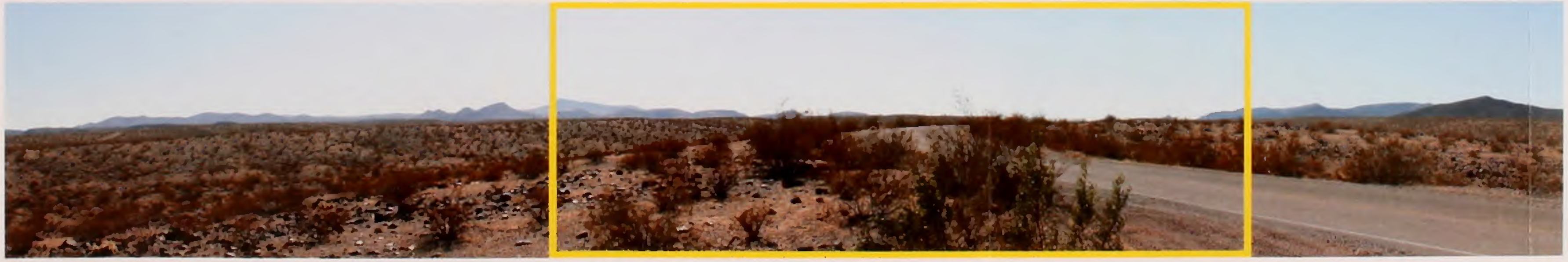
Surface Management

- 🟨 Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land
- ▭ State Boundary

Photograph Information

Time of photograph:	1:20 PM
Date of photograph:	11-23-09
Weather condition:	Clear
Viewing direction:	South
Latitude:	36°1'27.02"N
Longitude:	114°20'12.53"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Backlit
Nearest turbine:	6.5 Miles

Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



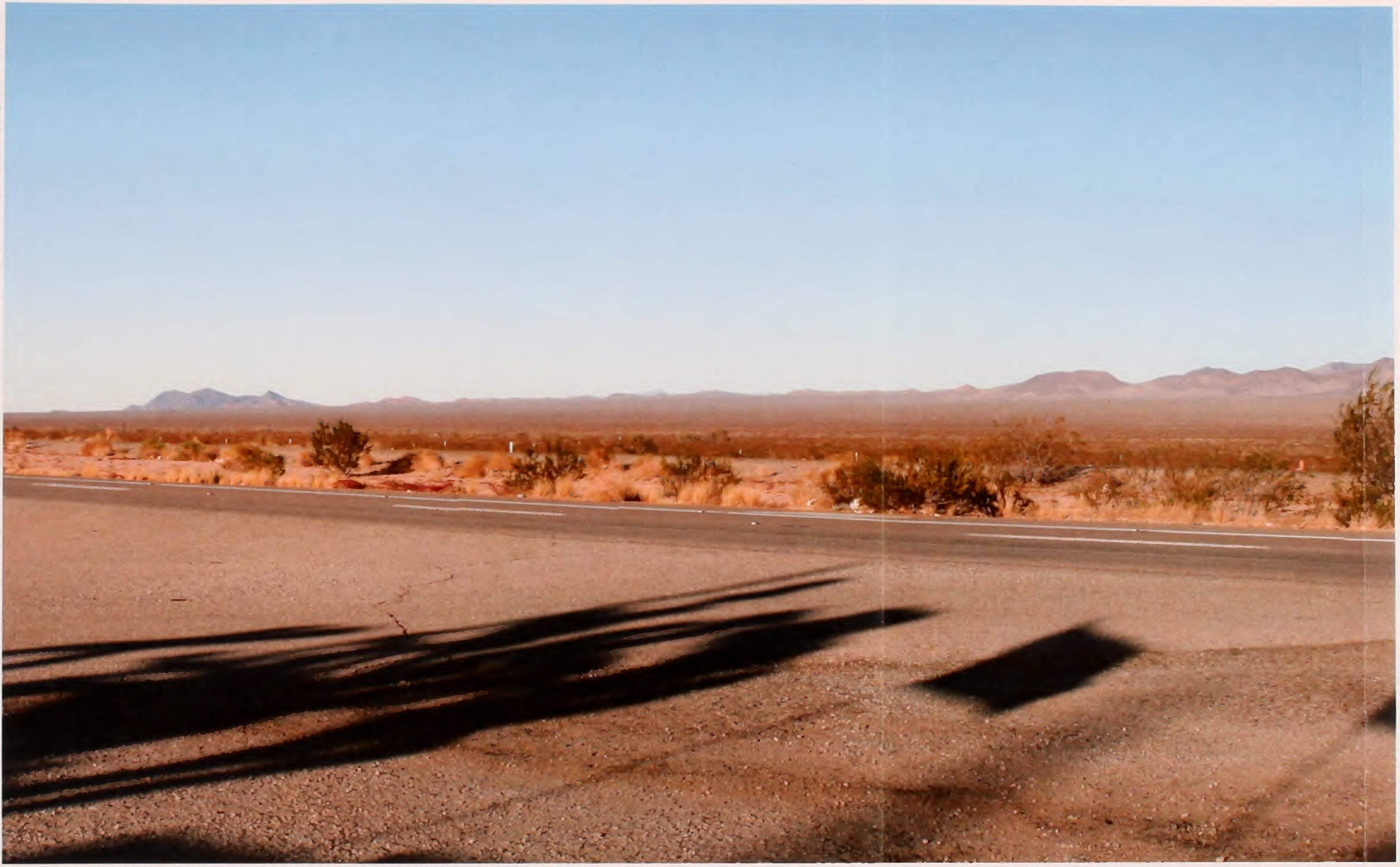
Simulation of Alternative C from Key Observation Point 7 Kiosk in Temple Basin Backlit Conditions

Mohave County Wind Project
Mohave County, Arizona

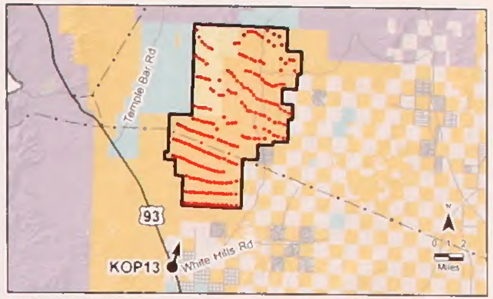
April 2012

Figure D-4(c)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land
- State Boundary

Photograph Information

Time of photograph:	4:04 PM
Date of photograph:	11-23-09
Weather condition:	Clear
Viewing direction:	Northeast
Latitude:	35°42'18.03"N
Longitude:	114°28'40.28"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Frontlit
Nearest turbine:	NA

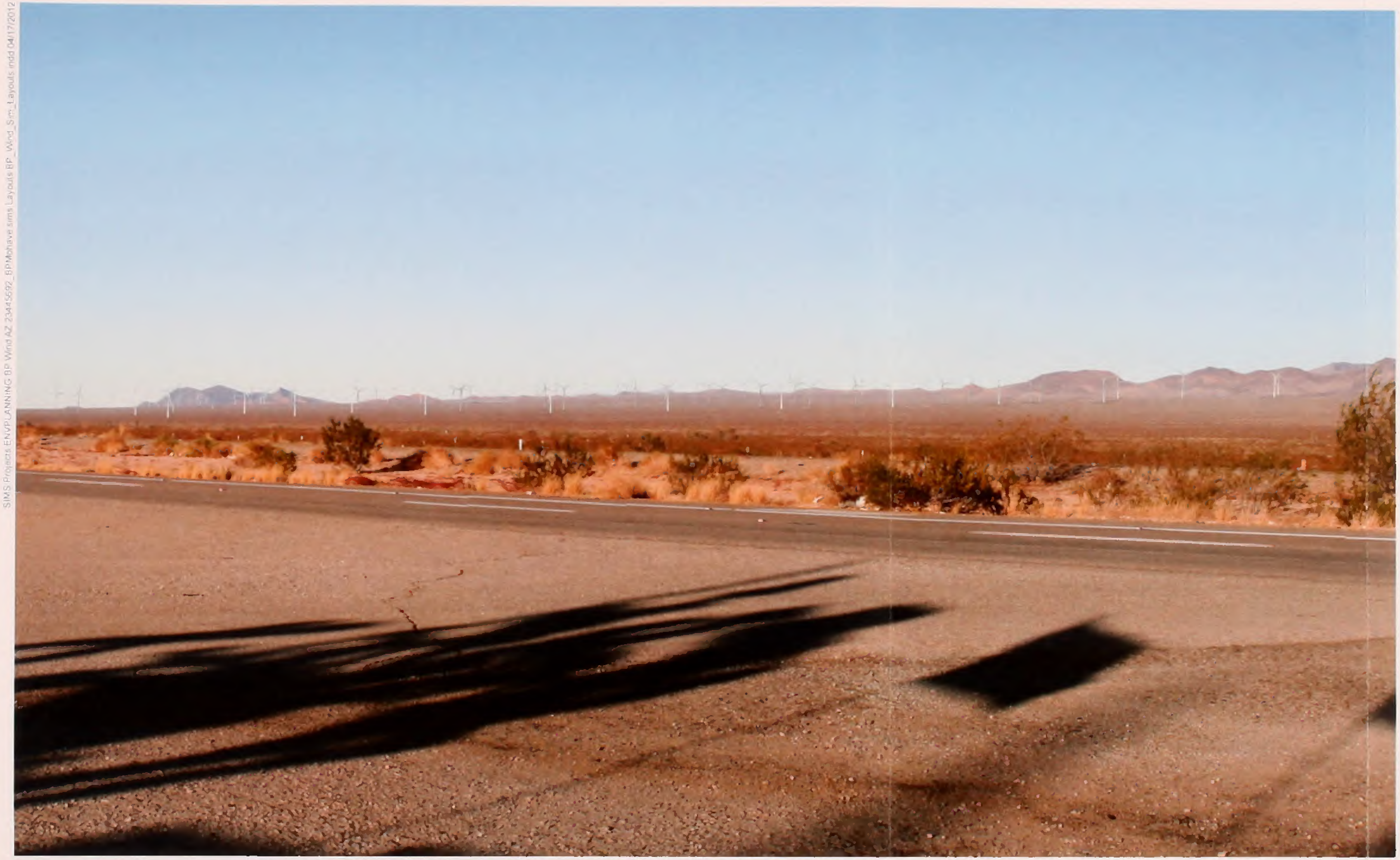
Existing Conditions from Key Observation Point 13 Rosie's Den on US 93 Frontlit Conditions

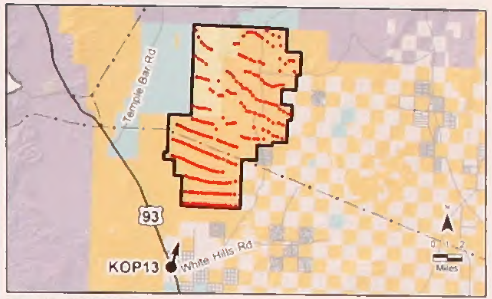
Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-5(a)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012





Viewpoint Location Map

Legend

- Key Observation Point
- ▭ Wind Farm Site
- · Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

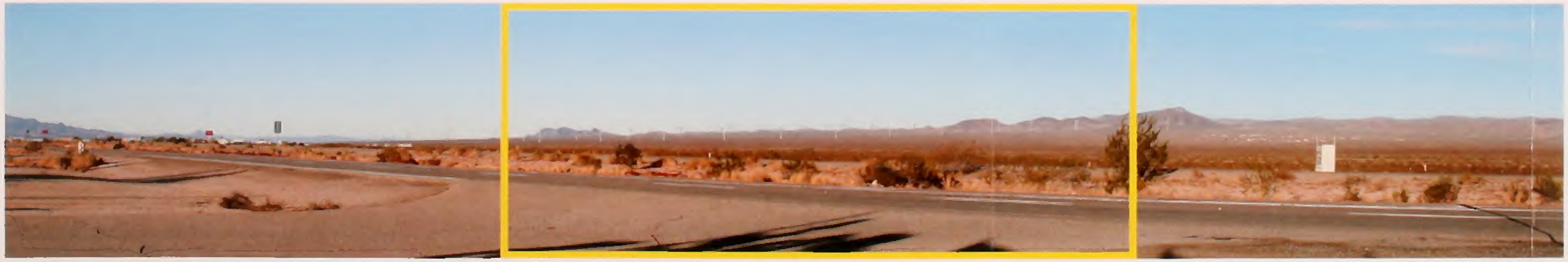
Surface Management

- 🟧 Bureau of Land Management
- 🟨 Bureau of Reclamation
- 🟪 National Park Service
- 🟦 State Trust Land
- Private Land
- ▭ State Boundary

Photograph Information

Time of photograph:	4:04 PM
Date of photograph:	11-23-09
Weather condition:	Clear
Viewing direction:	Northeast
Latitude:	35°42'18.03"N
Longitude:	114°28'40.28"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Frontlit
Nearest turbine:	4.3 Miles

Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



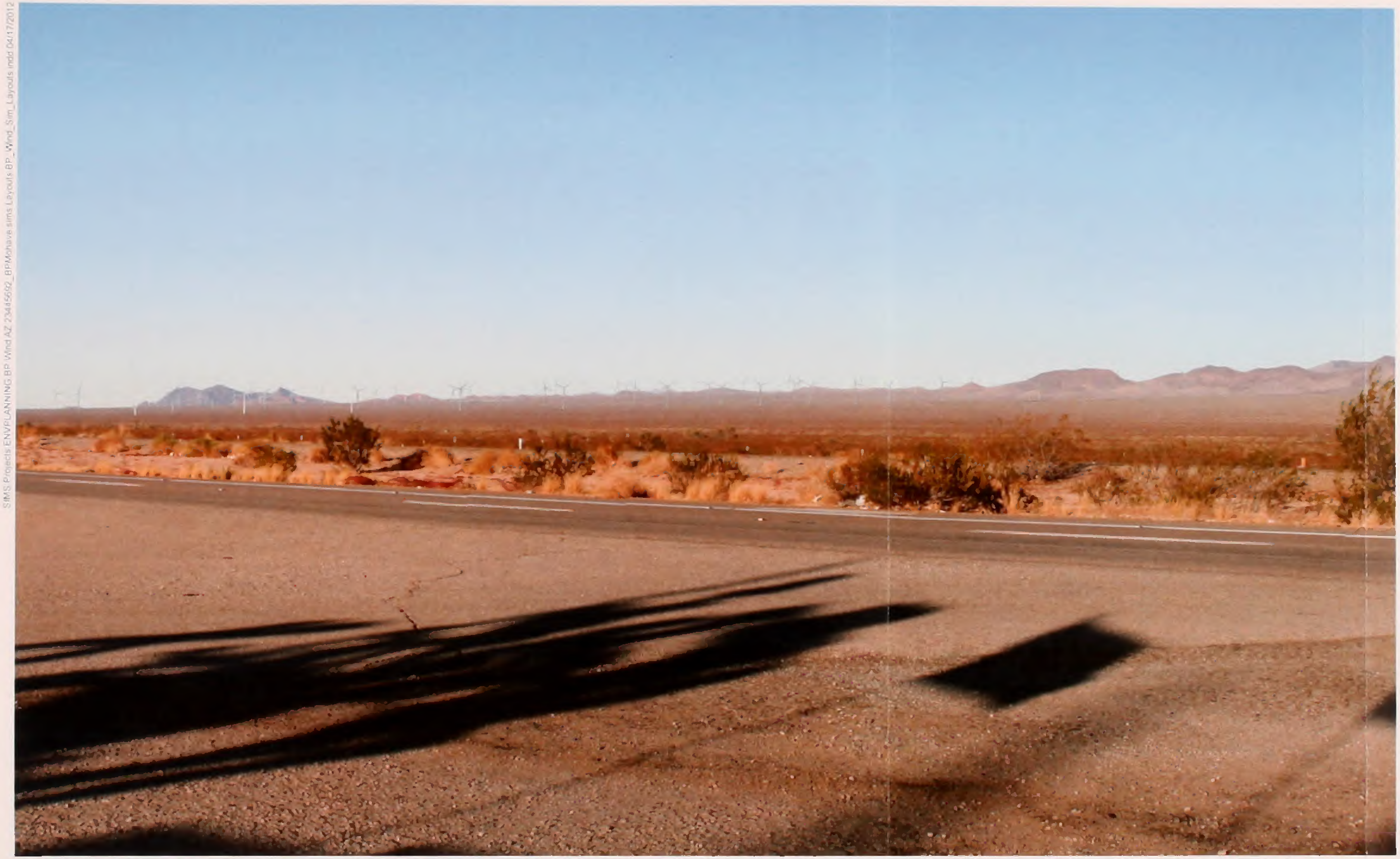
Simulation of Alternative A from Key Observation Point 13 Rosie's Den on US 93 Frontlit Conditions

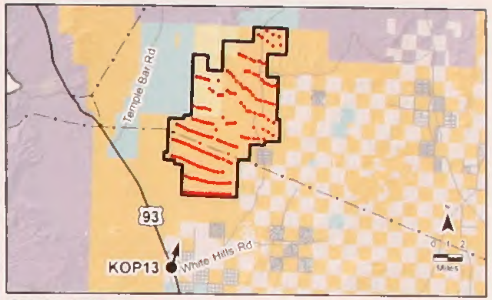
Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-5(b)

SIMS Projects ENVPLANNING BP Wind AZ 23445592_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012





Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

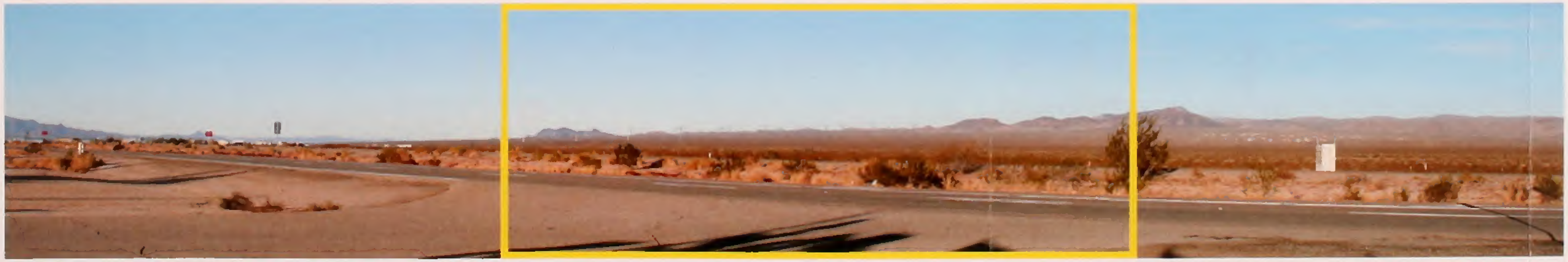
Surface Management

- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land
- State Boundary

Photograph Information

Time of photograph:	4:04 PM
Date of photograph:	11-23-09
Weather condition:	Clear
Viewing direction:	Northeast
Latitude:	35°42'18.03"N
Longitude:	114°28'40.28"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Frontlit
Nearest turbine:	5.0 Miles

Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



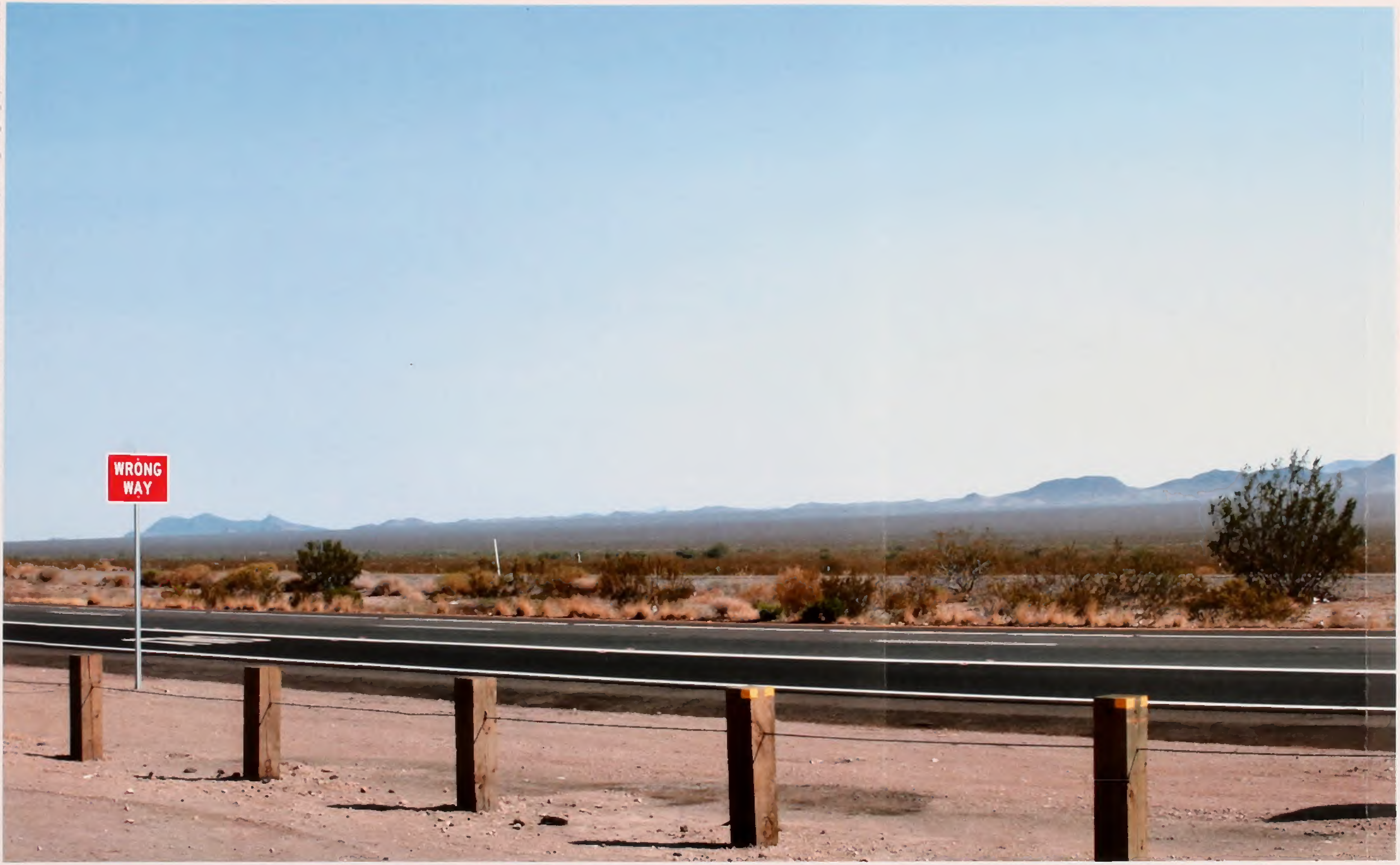
Simulation of Alternative C from Key Observation Point 13 Rosie's Den on US 93 Frontlit Conditions

Mohave County Wind Project
Mohave County, Arizona

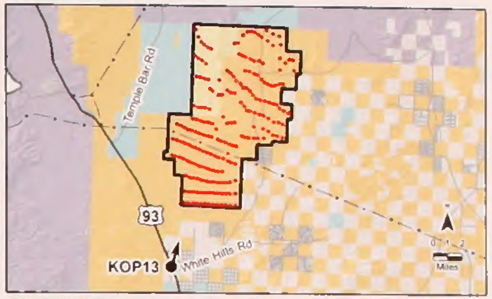
April 2012

Figure D-5(c)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Viewpoint Location Map

Legend

- Key Observation Point
- ▭ Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- 🟧 Bureau of Land Management
- 🟨 Bureau of Reclamation
- 🟪 National Park Service
- 🟦 State Trust Land
- Private Land
- ▭ State Boundary

Photograph Information

Time of photograph:	9:59 AM
Date of photograph:	9-7-11
Weather condition:	Clear
Viewing direction:	Northeast
Latitude:	35°42'18.12"N
Longitude:	114°28'40.16"W
Camera:	Nikon D700
Lens:	50mm
Lighting condition:	Backlit
Nearest turbine:	NA

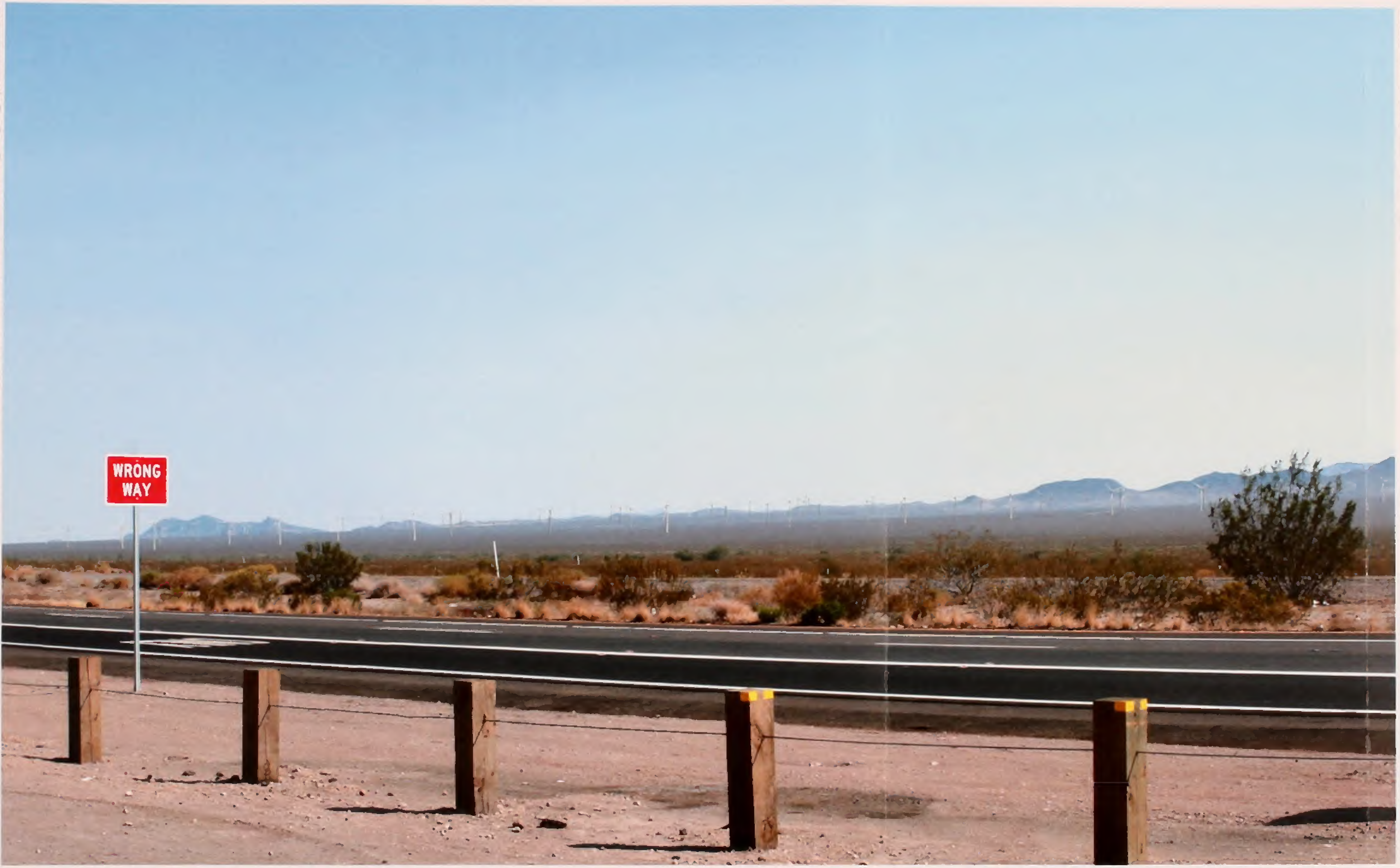
Existing Conditions from Key Observation Point 13 Rosie's Den on US 93 Backlit Conditions

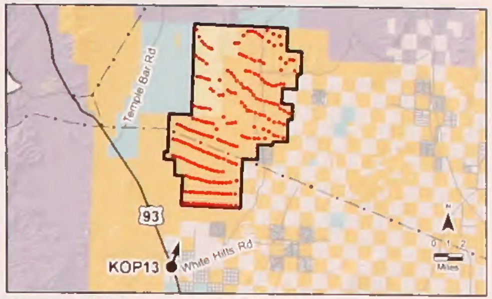
Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-5(d)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012





Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

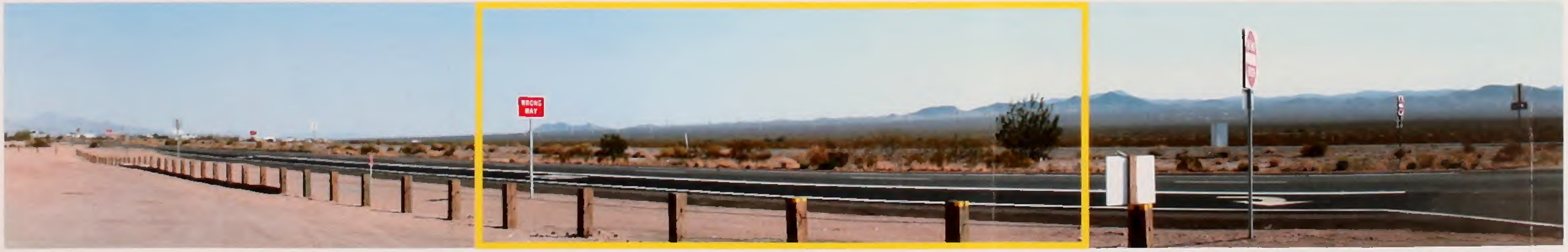
Surface Management

- 🟨 Bureau of Land Management
- 🟨 Bureau of Reclamation
- 🟪 National Park Service
- 🟦 State Trust Land
- Private Land
- ▭ State Boundary

Photograph Information

Time of photograph:	9:59 AM
Date of photograph:	9-7-11
Weather condition:	Clear
Viewing direction:	Northeast
Latitude:	35°42'18.12"N
Longitude:	114°28'40.16"W
Camera:	Nikon D700
Lens:	50mm
Lighting condition:	Backlit
Nearest turbine:	4.3 Miles

Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.

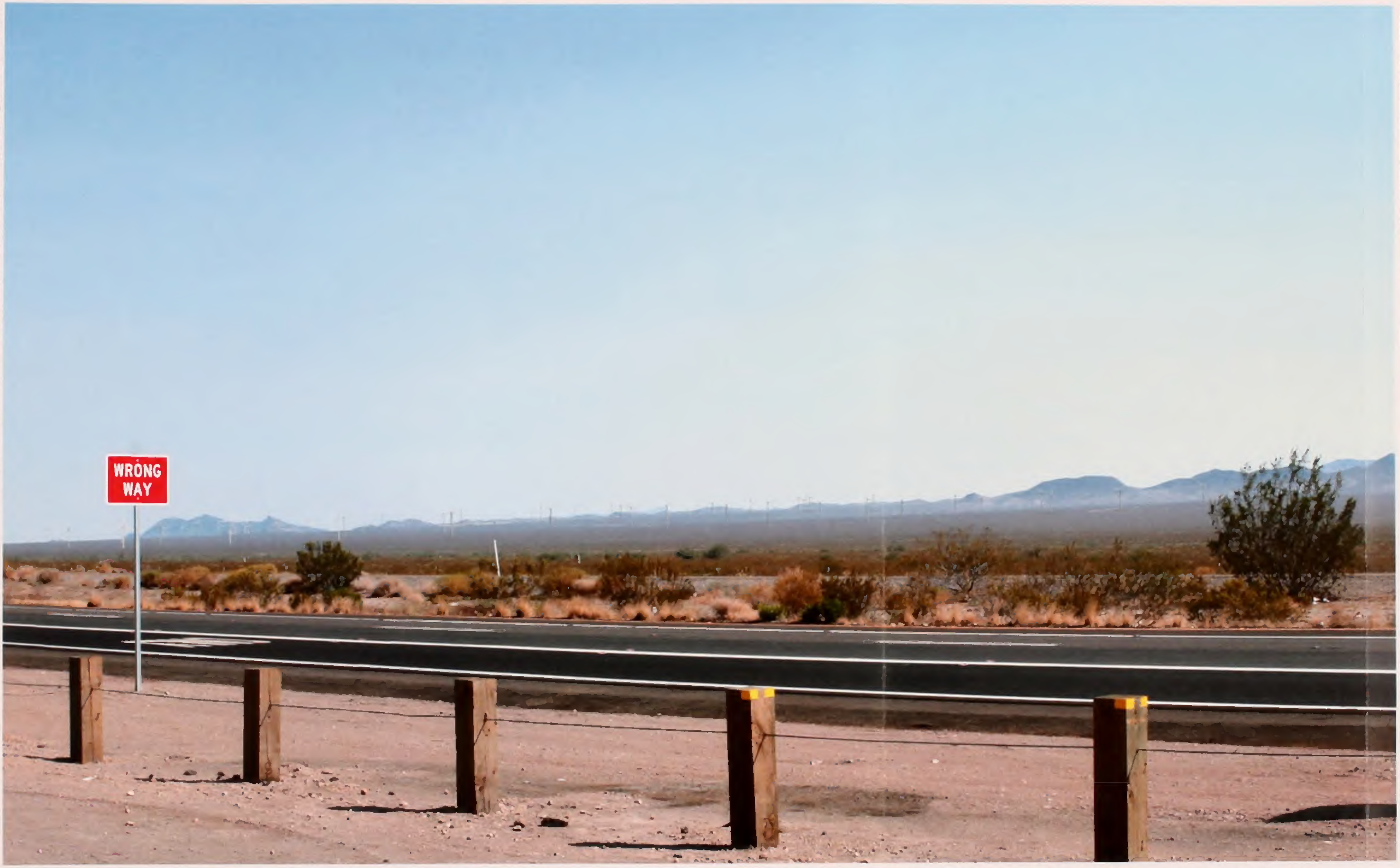


Simulation of Alternative A from Key Observation Point 13 Rosie's Den on US 93 Backlit Conditions

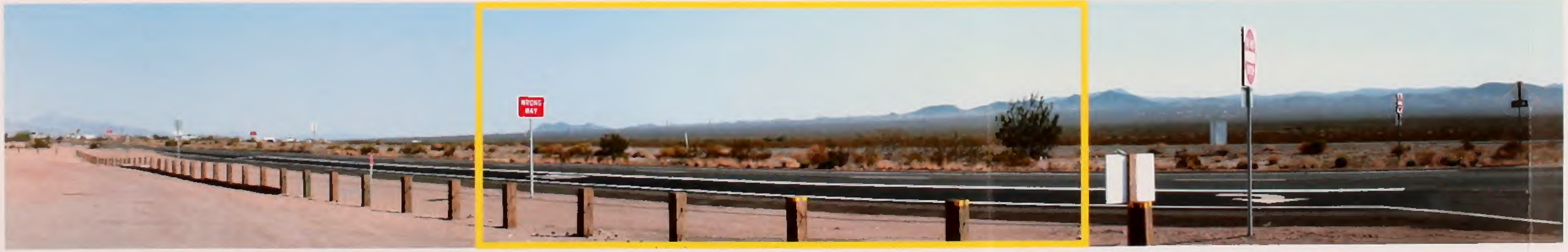
Mohave County Wind Project
Mohave County, Arizona

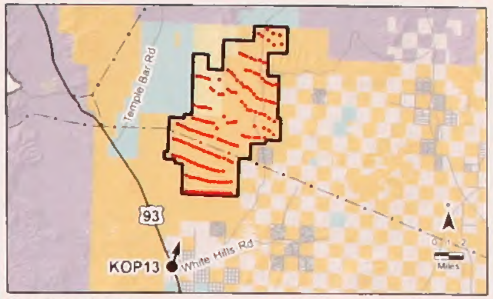
April 2012

Figure D-5(e)



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.





Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land
- State Boundary

Photograph Information

Time of photograph:	9:59 AM
Date of photograph:	9-7-11
Weather condition:	Clear
Viewing direction:	Northeast
Latitude:	35°42'18.12"N
Longitude:	114°28'40.16"W
Camera:	Nikon D700
Lens:	50mm
Lighting condition:	Backlit
Nearest turbine:	5.0 Miles

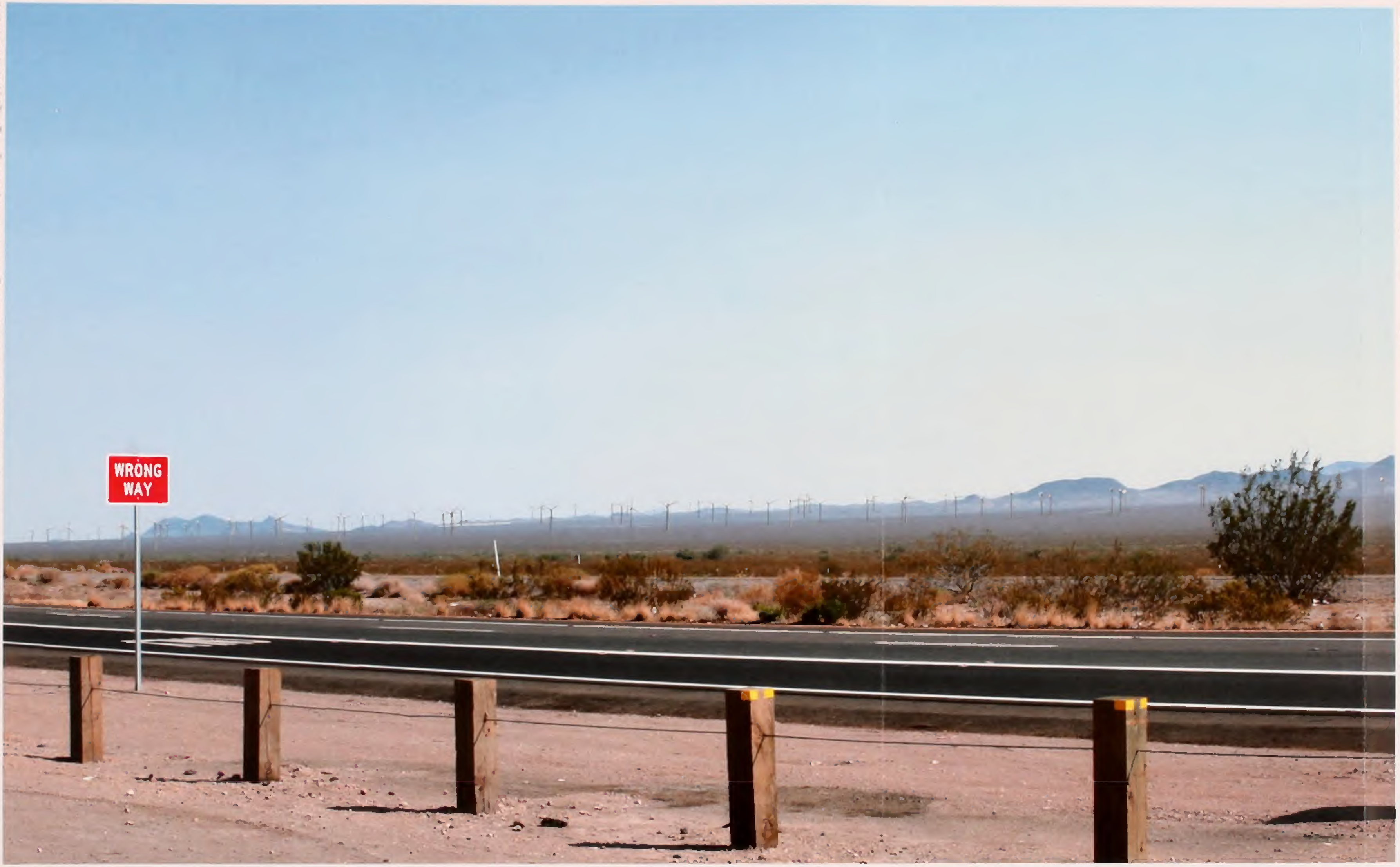
Simulation of Alternative C from Key Observation Point 13 Rosie's Den on US 93 Backlit Conditions

Mohave County Wind Project
Mohave County, Arizona

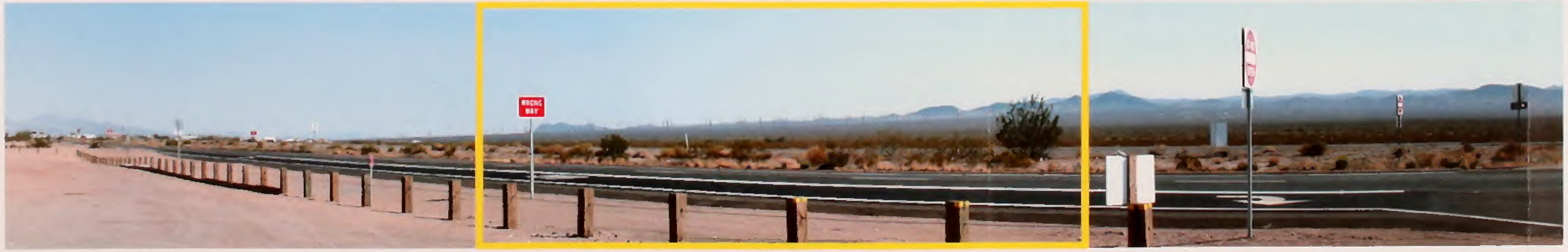
April 2012

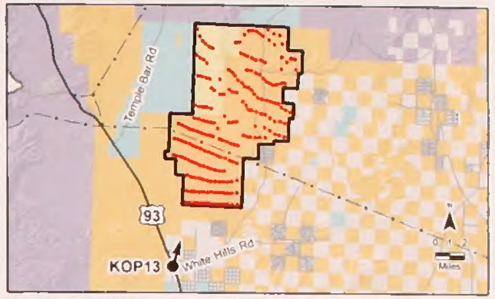
Figure D-5(f)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.





Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land
- State Boundary

Photograph Information

Time of photograph:	9:59 AM
Date of photograph:	9-7-11
Weather condition:	Clear
Viewing direction:	Northeast
Latitude:	35°42'18.12"N
Longitude:	114°28'40.16"W
Camera:	Nikon D700
Lens:	50mm
Lighting condition:	Backlit
Nearest turbine:	4.3 Miles

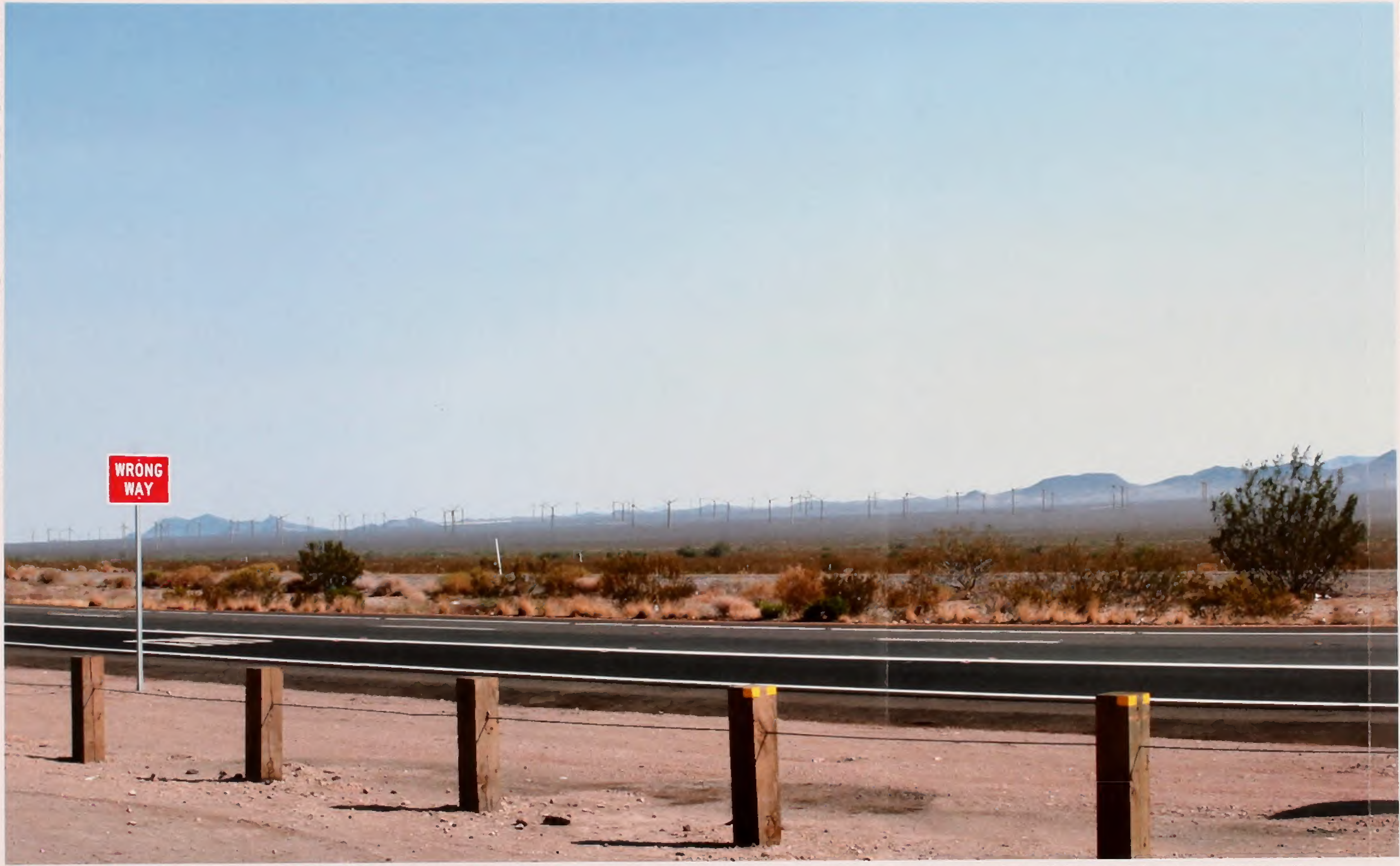
Simulation of Alternative A from Key Observation Point 13 Rosie's Den on US 93 Backlit Conditions, Shadow Gray Turbines with Warning Lights On

Mohave County Wind Project
Mohave County, Arizona

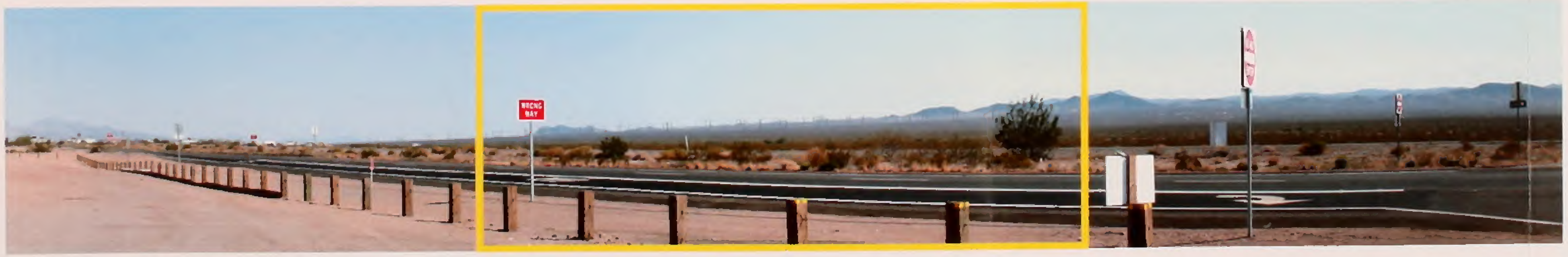
April 2012

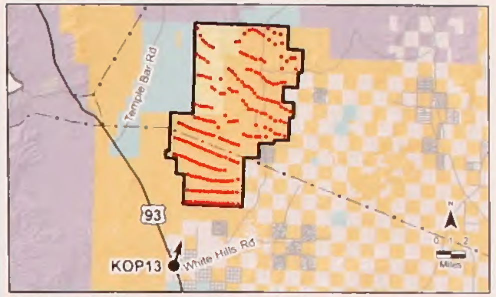
Figure D-5(g)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.





Viewpoint Location Map

Legend

Key Observation Point

▭ Wind Farm Site

• Proposed Wind Turbine Layout

Transmission Line

U.S. Highway

Road

Surface Management

Bureau of Land Management

Bureau of Reclamation

National Park Service

State Trust Land

Private Land

▭ State Boundary

Photograph Information

Time of photograph:	9:59 AM
Date of photograph:	9-7-11
Weather condition:	Clear
Viewing direction:	Northeast
Latitude:	35°42'18.12"N
Longitude:	114°28'40.16"W
Camera:	Nikon D700
Lens:	50mm
Lighting condition:	Backlit
Nearest turbine:	4.3 Miles

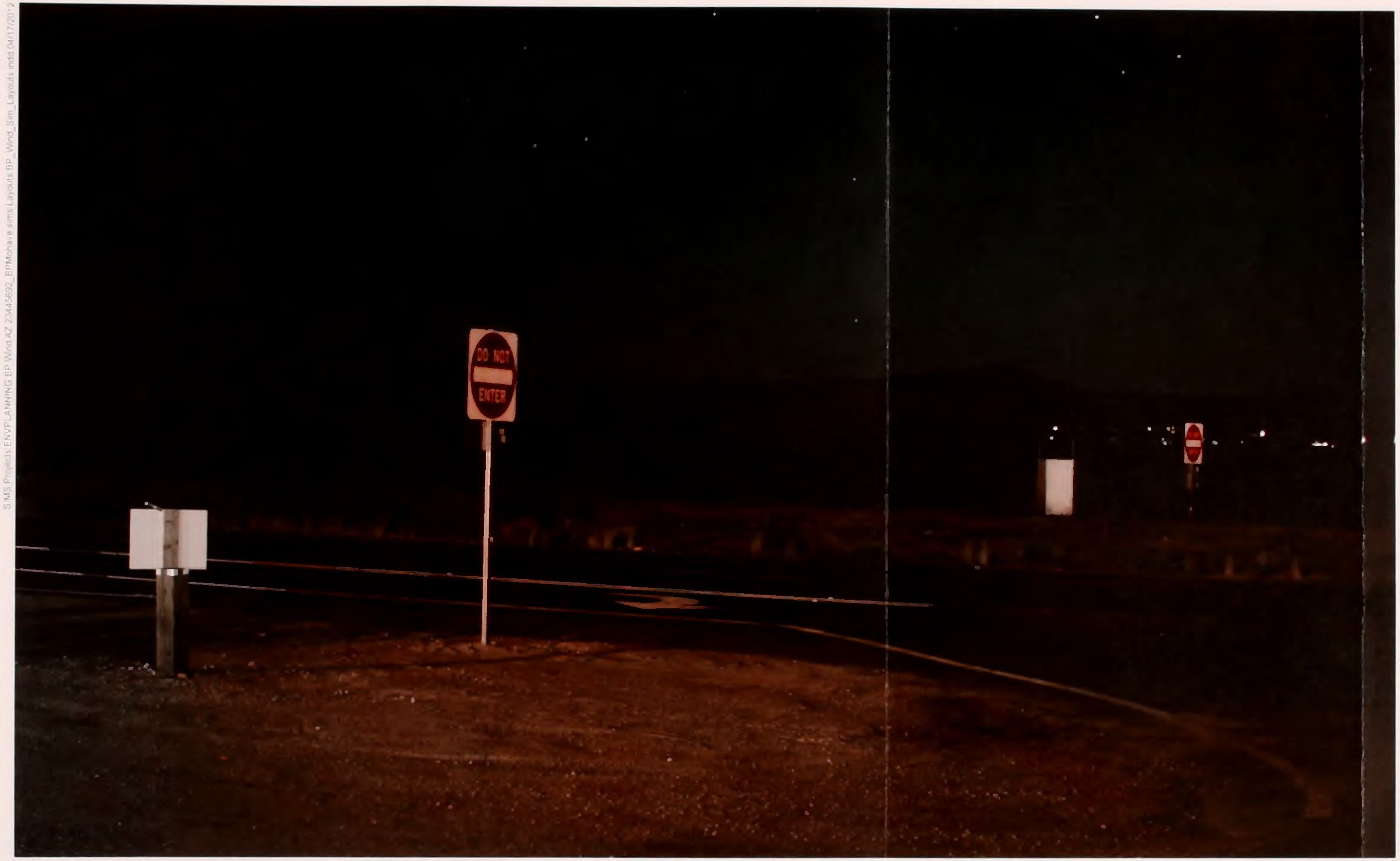
Simulation of Alternative A from Key Observation Point 13 Rosie's Den on US 93 Backlit Conditions, Shadow Gray Turbines with Warning Lights Off

Mohave County Wind Project
Mohave County, Arizona

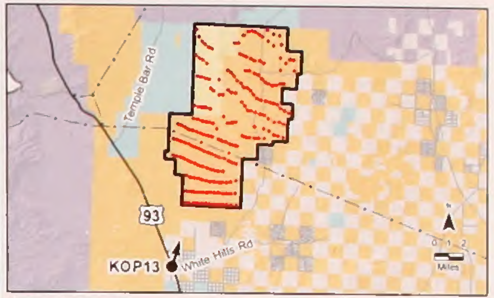
April 2012

Figure D-5(h)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper.



Viewpoint Location Map

Legend

Key Observation Point
▭ Wind Farm Site
· Proposed Wind Turbine Layout
Transmission Line
U.S. Highway
Road

Surface Management

🟨 Bureau of Land Management
Bureau of Reclamation
National Park Service
State Trust Land
Private Land
▭ State Boundary

Photograph Information

Time of photograph:	9:30 PM
Date of photograph:	9-6-11
Weather condition:	Clear
Viewing direction:	Northeast
Latitude:	35°42'18.12"N
Longitude:	114°28'40.16"W
Camera:	Nikon D700
Lens:	50mm
Lighting condition:	Nighttime
Nearest turbine:	NA

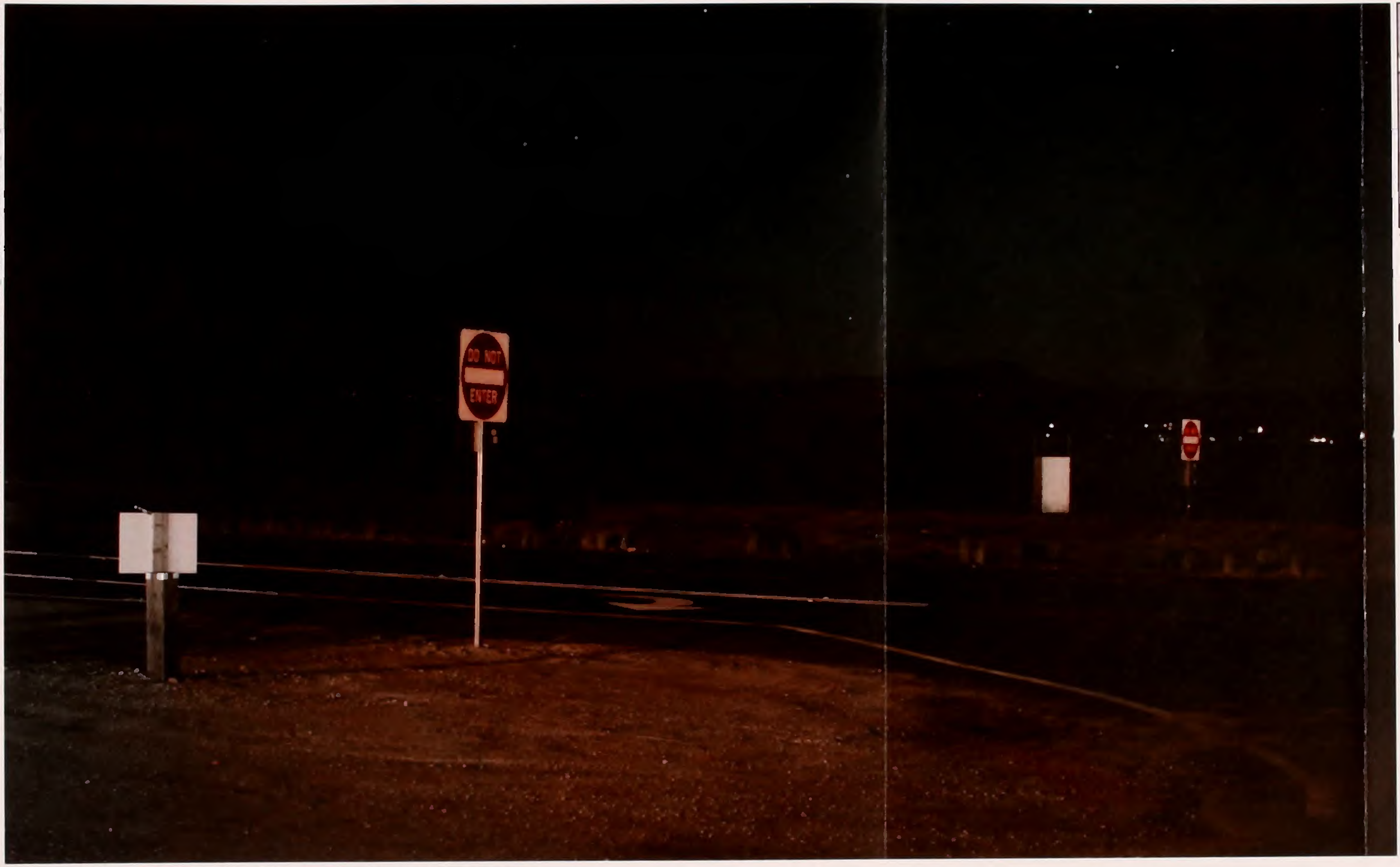
Existing Conditions from Key Observation Point 13 Rosie's Den on US 93 Nighttime Conditions

Mohave County Wind Project
Mohave County, Arizona

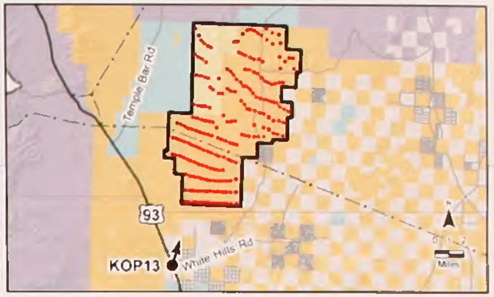
April 2012

Figure D-5(i)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper.



Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land
- State Boundary

Photograph Information

Time of photograph:	9:30 PM
Date of photograph:	9-6-11
Weather condition:	Clear
Viewing direction:	Northeast
Latitude:	35°42'18.12"N
Longitude:	114°28'40.16"W
Camera:	Nikon D700
Lens:	50mm
Lighting condition:	Nighttime
Nearest turbine:	4.3 Miles

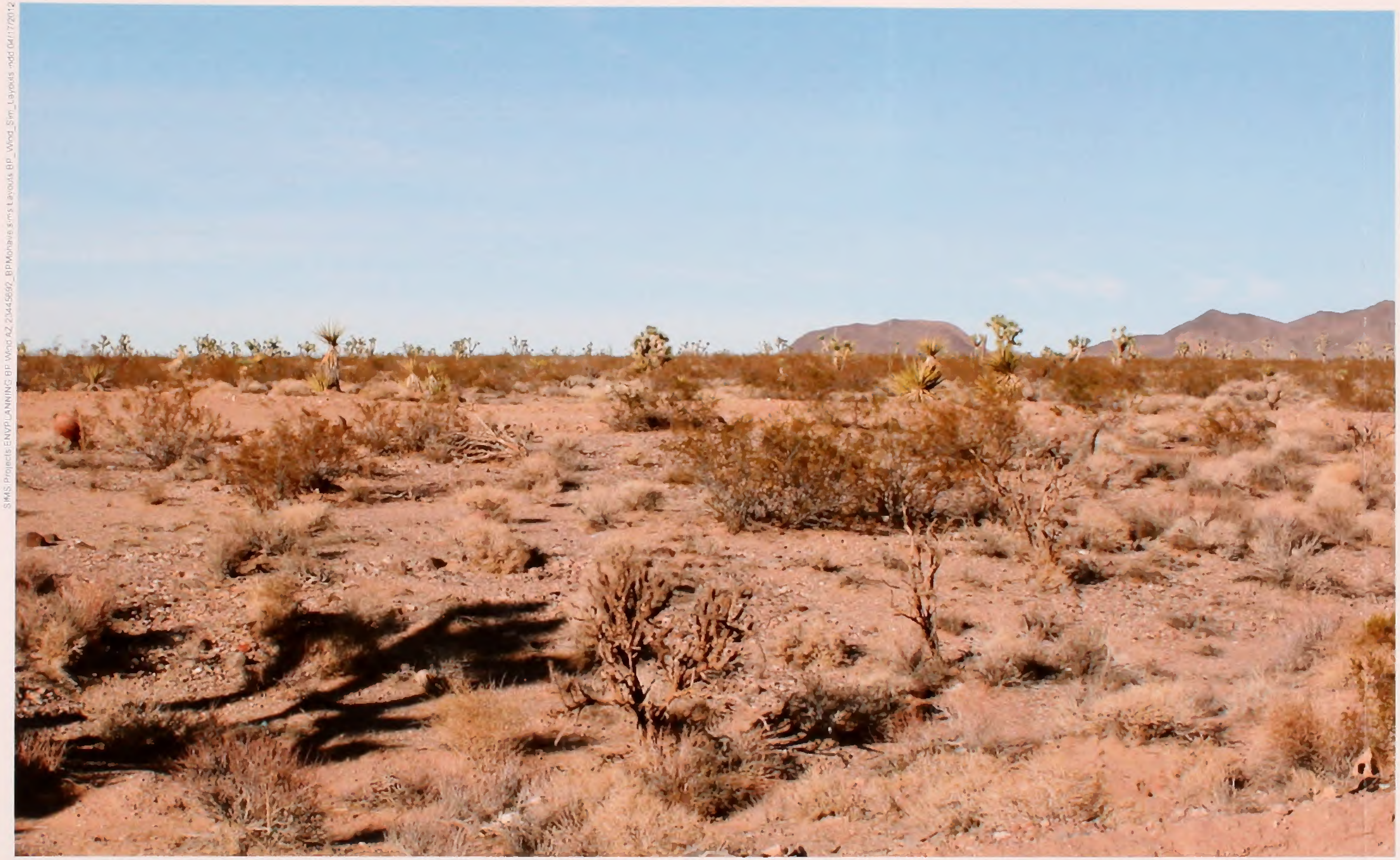
Simulation of Alternative A from Key Observation Point 13 Rosie's Den on US 93 Nighttime Conditions

Mohave County Wind Project
Mohave County, Arizona

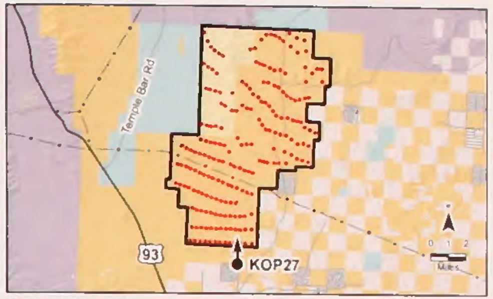
April 2012

Figure D-5(j)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Viewpoint Location Map

Legend

Key Observation Point
Wind Farm Site
Proposed Wind Turbine Layout
Transmission Line
U.S. Highway
Road

Surface Management

Bureau of Land Management
Bureau of Reclamation
National Park Service
State Trust Land
Private Land

Photograph Information

Time of photograph:	4:20 PM
Date of photograph:	11-24-09
Weather condition:	Partly Cloudy
Viewing direction:	North
Latitude:	35°44'58.04"N
Longitude:	114°25'2.87"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Sidelit
Nearest turbine:	NA

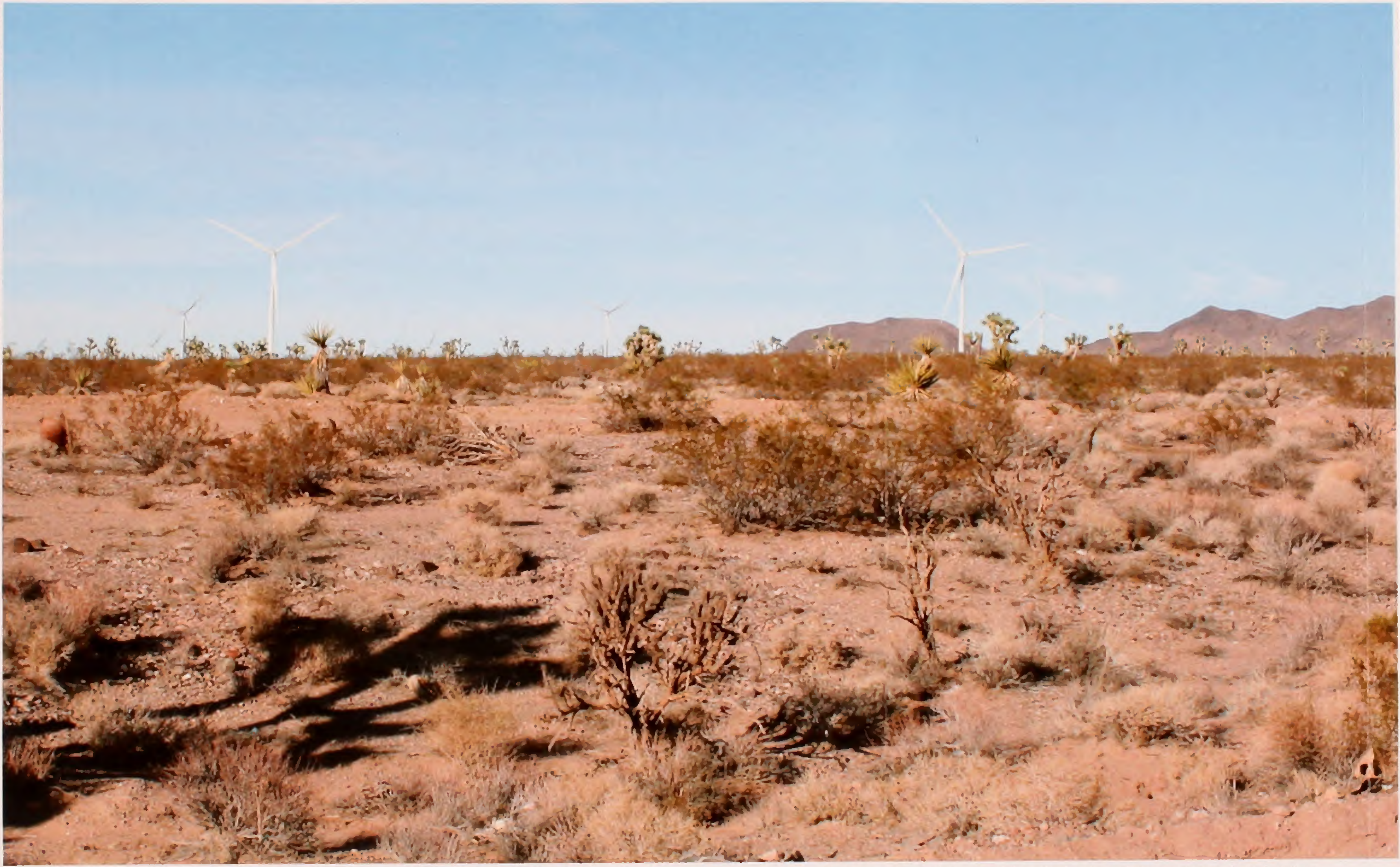
Existing Conditions from Key Observation Point 27 11025 Indian Peak Road Sidelit Conditions

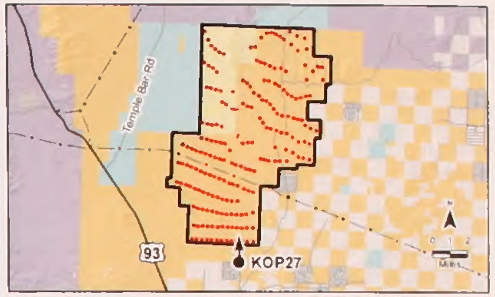
Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-6(a)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012





Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

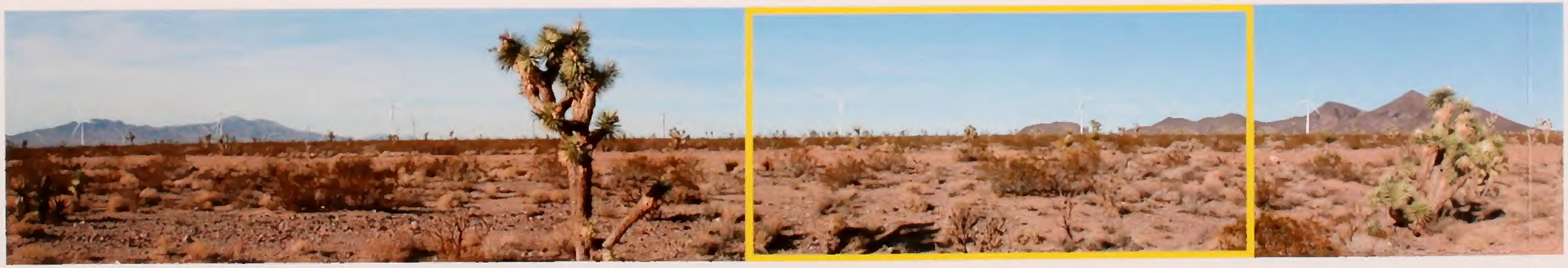
Surface Management

- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land

Photograph Information

Time of photograph:	4:20 PM
Date of photograph:	11-24-09
Weather condition:	Partly Cloudy
Viewing direction:	North
Latitude:	35°44'58.04"N
Longitude:	114°25'2.87"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Sidelit
Nearest turbine:	1.2 Miles

Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



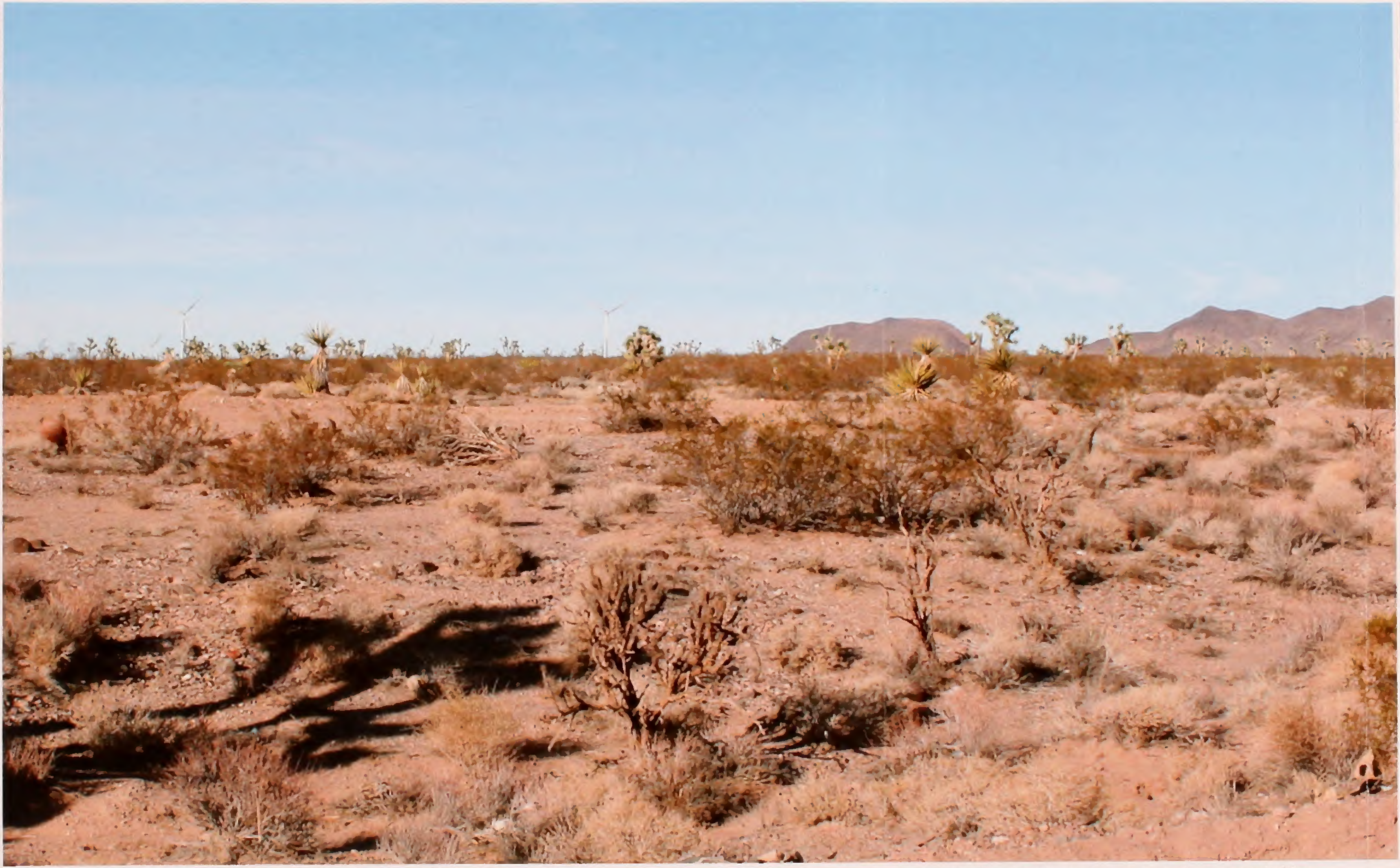
Simulation of Alternative A from Key Observation Point 27 11025 Indian Peak Road Sidelit Conditions

Mohave County Wind Project
Mohave County, Arizona

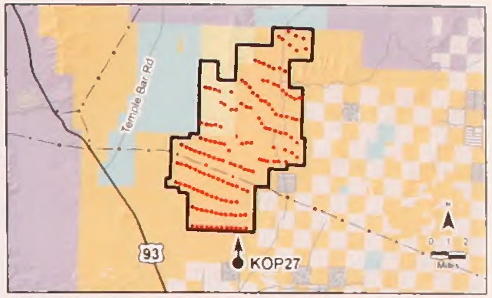
April 2012

Figure D-6(b)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Viewpoint Location Map

Legend

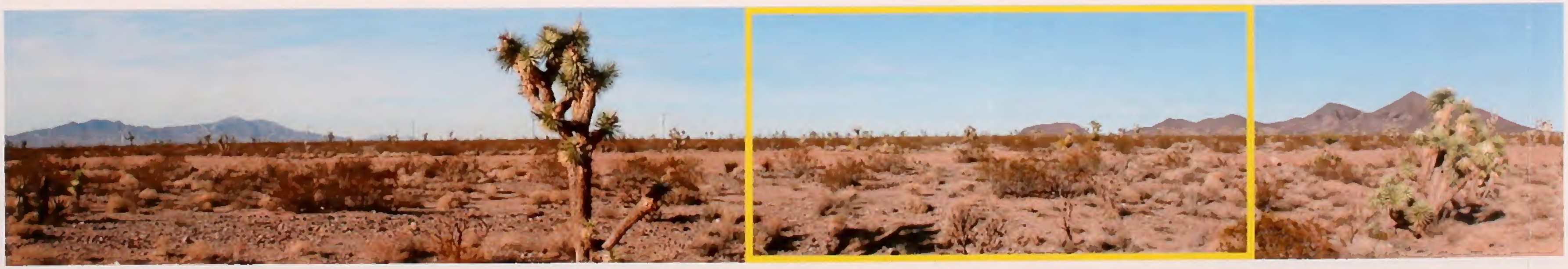
- Key Observation Point
- ▭ Wind Farm Site
- · Proposed Wind Turbine Layout
- — · — Transmission Line
- — U.S. Highway
- — Road

Surface Management

- 🟧 Bureau of Land Management
- 🟨 Bureau of Reclamation
- 🟪 National Park Service
- 🟦 State Trust Land
- Private Land

Photograph Information

Time of photograph:	4:20 PM
Date of photograph:	11-24-09
Weather condition:	Partly Cloudy
Viewing direction:	North
Latitude:	35°44'58.04"N
Longitude:	114°25'2.87"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Sidelit
Nearest turbine:	1.9 Miles



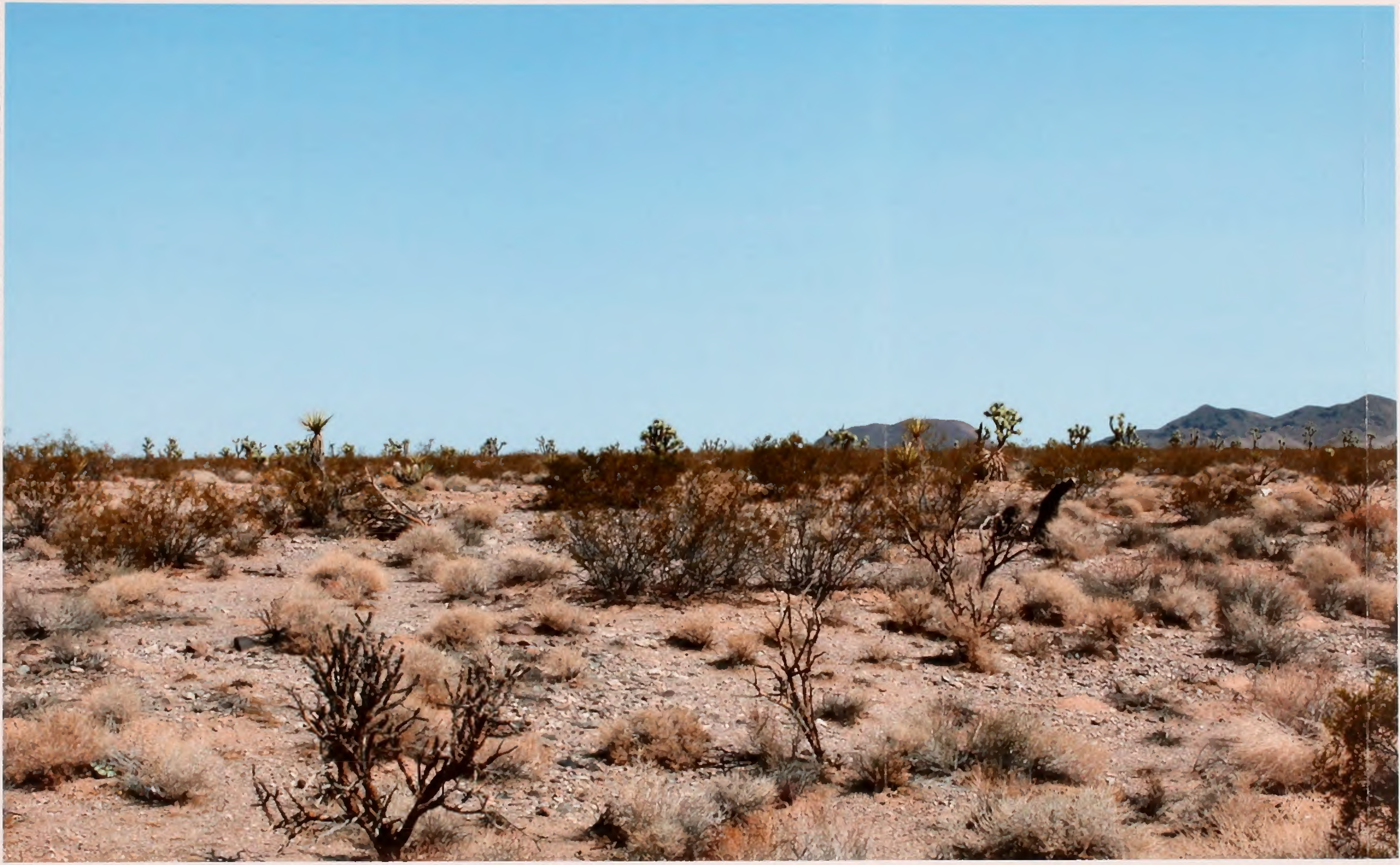
Simulation of Alternative C from Key Observation Point 27 11025 Indian Peak Road Sidelit Conditions

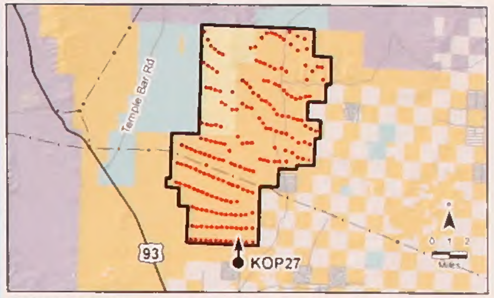
Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-6(c)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012





Viewpoint Location Map

Legend

↥	Key Observation Point
▭	Wind Farm Site
·	Proposed Wind Turbine Layout
— · —	Transmission Line
——	U.S. Highway
——	Road

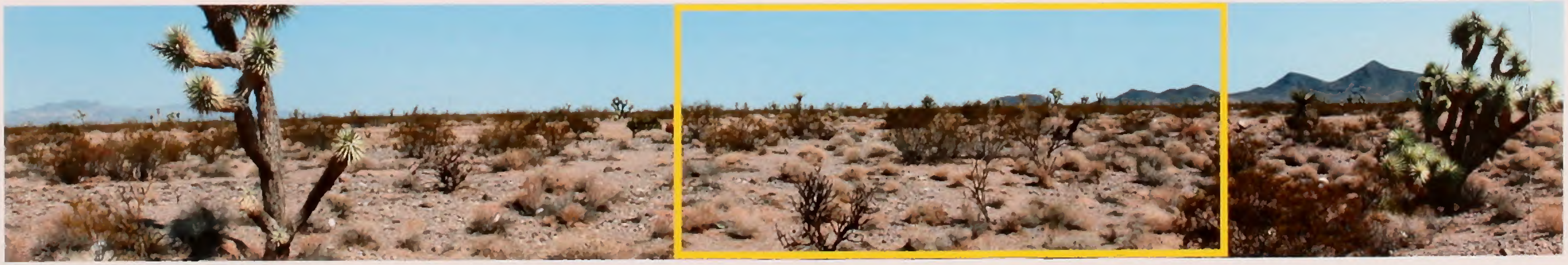
Surface Management

🟧	Bureau of Land Management
🟨	Bureau of Reclamation
🟪	National Park Service
🟦	State Trust Land
⬜	Private Land

Photograph Information

Time of photograph:	10:41 AM
Date of photograph:	9-7-11
Weather condition:	Clear
Viewing direction:	North
Latitude:	35°44'58.02"N
Longitude:	114°25'2.20"W
Camera:	Nikon D700
Lens:	50mm
Lighting condition:	Frontlit
Nearest turbine:	NA

Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



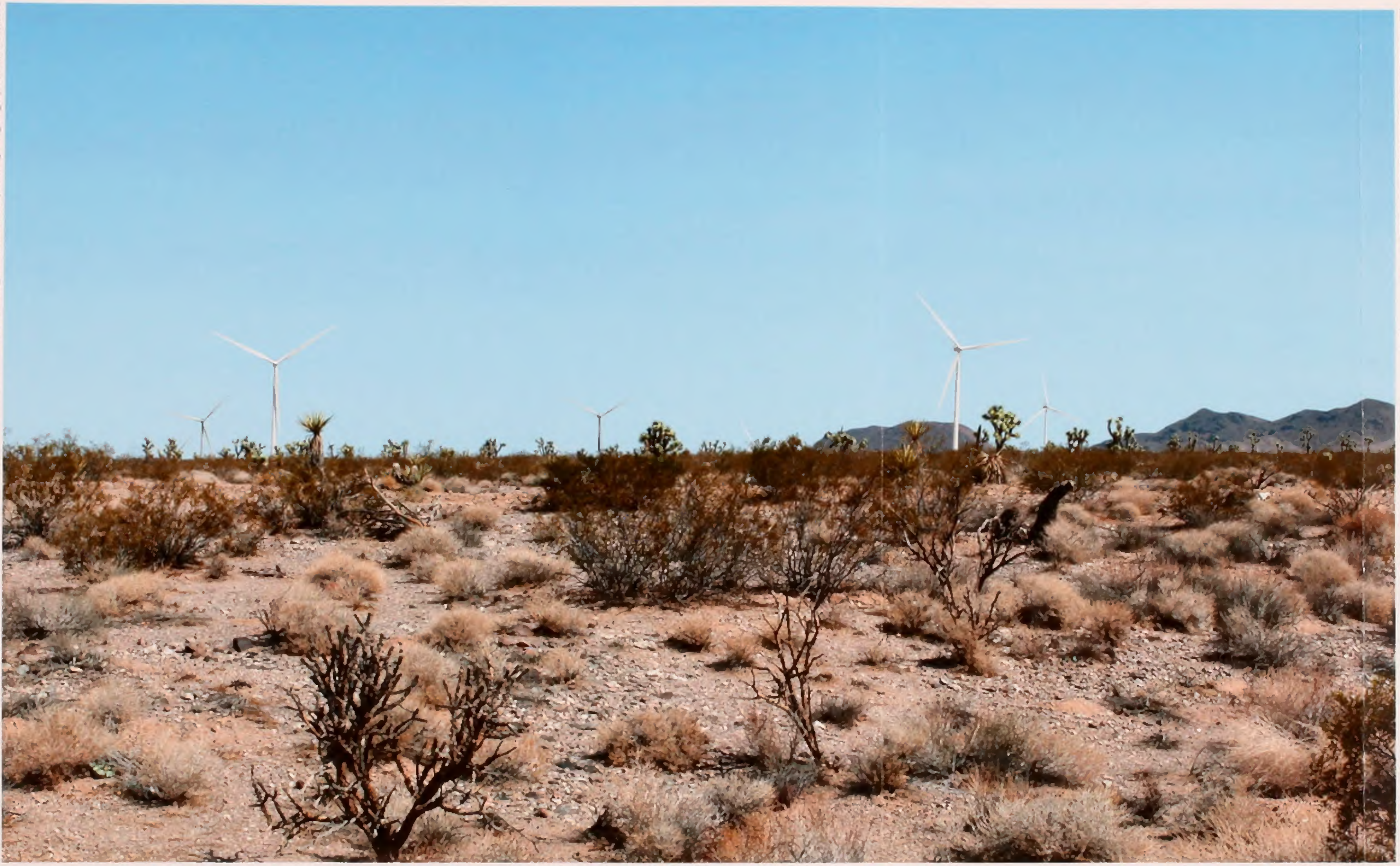
Existing Conditions from Key Observation Point 27 11025 Indian Peak Road Frontlit Conditions

Mohave County Wind Project
Mohave County, Arizona

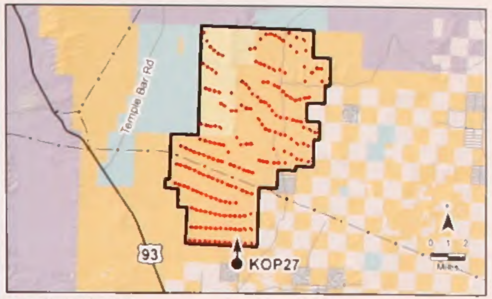
April 2012

Figure D-6(d)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land

Photograph Information

Time of photograph:	10:41 AM
Date of photograph:	9-7-11
Weather condition:	Clear
Viewing direction:	North
Latitude:	35°44'58.02"N
Longitude:	114°25'2.20"W
Camera:	Nikon D700
Lens:	50mm
Lighting condition:	Frontlit
Nearest turbine:	1.2 Miles

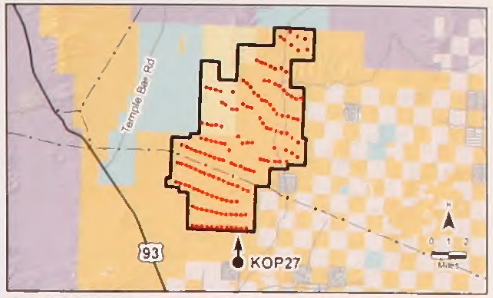
Simulation of Alternative A from Key Observation Point 27 11025 Indian Peak Road Frontlit Conditions

Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-6(e)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



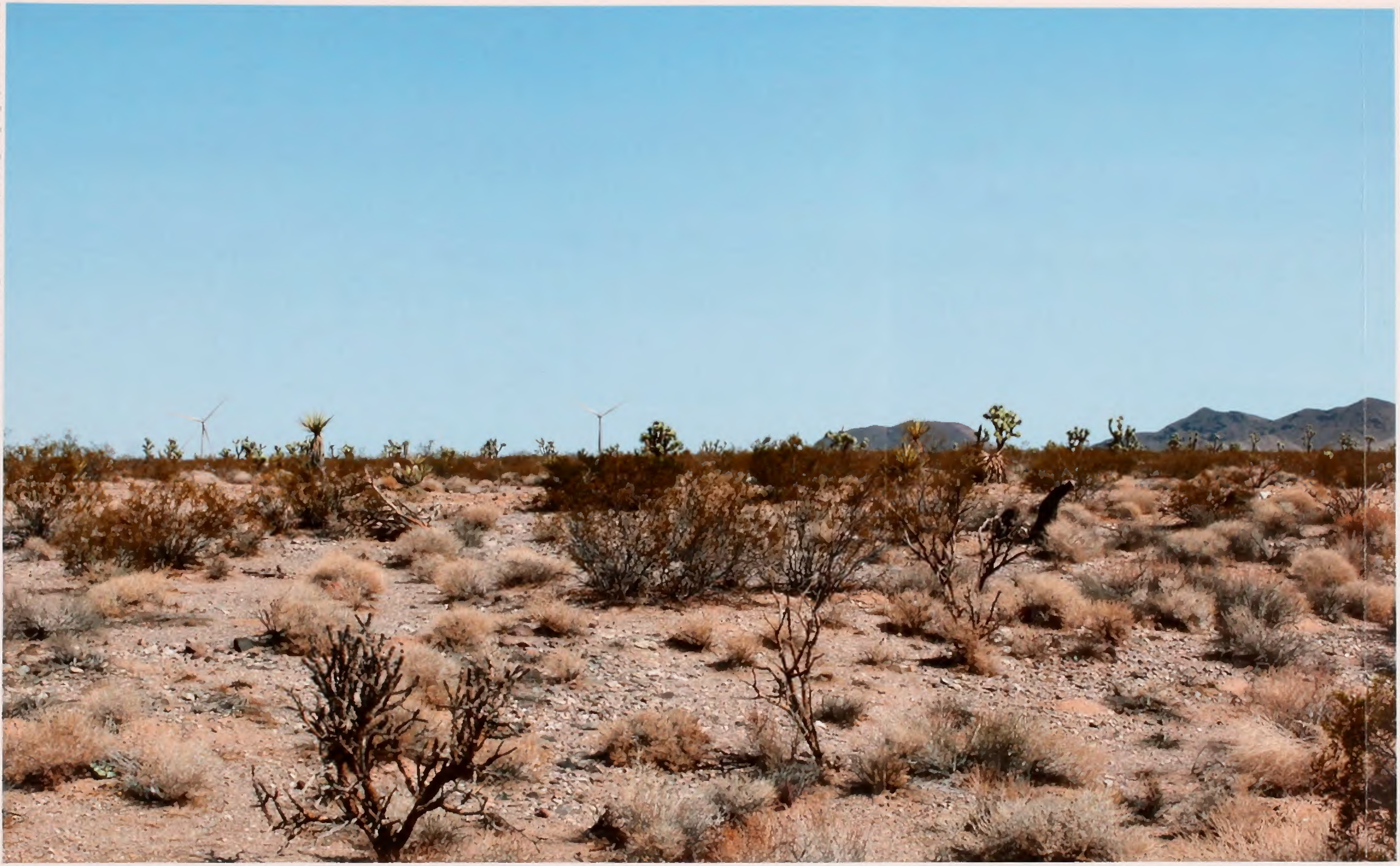
Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.

Photograph Information

Time of photograph:	10:41 AM
Date of photograph:	9-7-11
Weather condition:	Clear
Viewing direction:	North
Latitude:	35°44'58.02"N
Longitude:	114°25'2.20"W
Camera:	Nikon D700
Lens:	50mm
Lighting condition:	Frontlit
Nearest turbine:	1.9 Miles

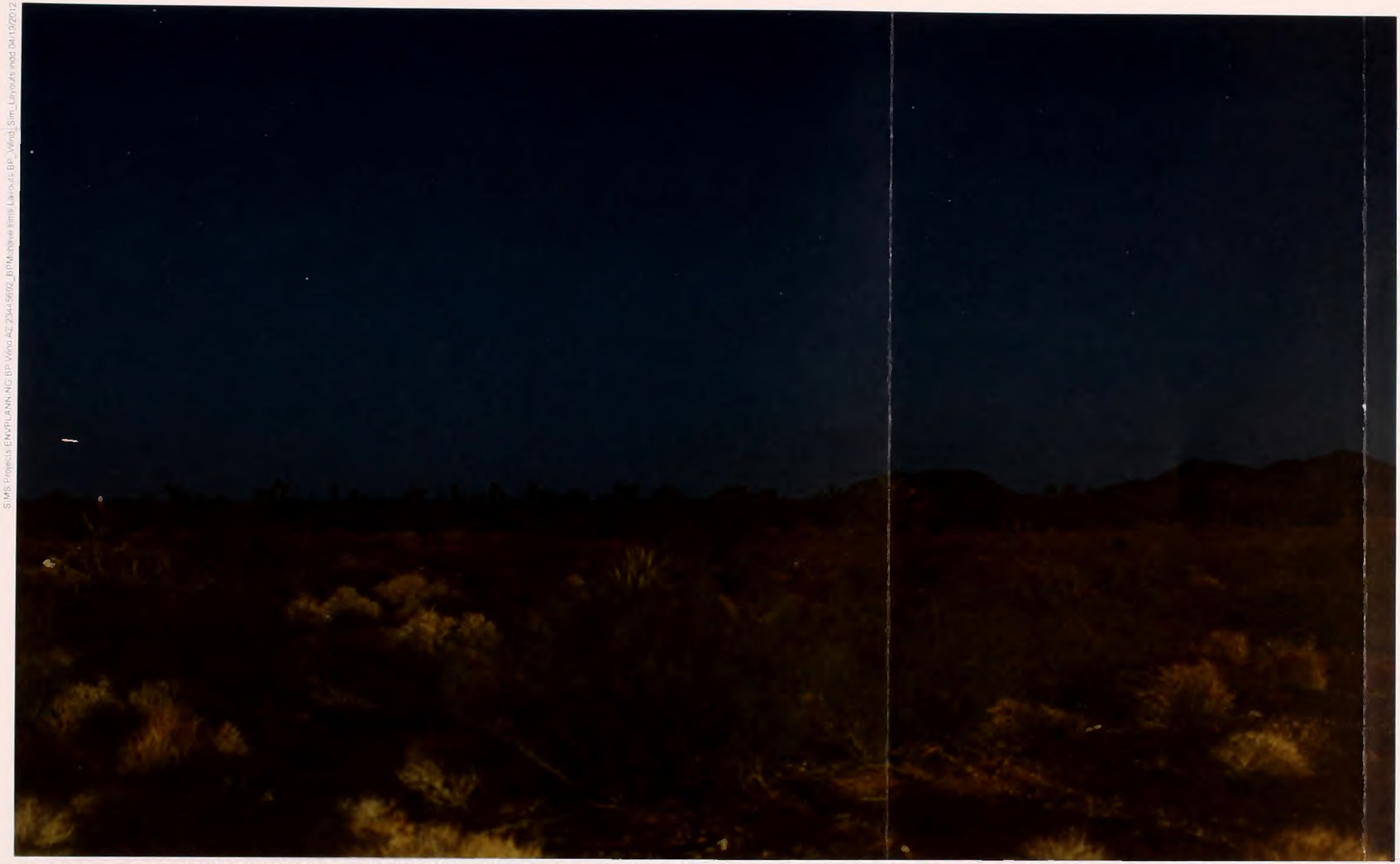
Simulation of Alternative C from Key Observation Point 27 11025 Indian Peak Road Frontlit Conditions

Mohave County Wind Project
Mohave County, Arizona

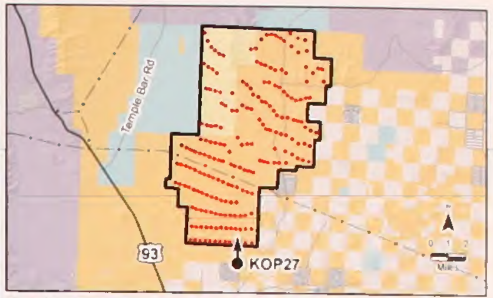
April 2012

Figure D-6(f)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/19/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Viewpoint Location Map

Legend

Key Observation Point
Wind Farm Site
Proposed Wind Turbine Layout
Transmission Line
U.S. Highway
Road

Surface Management

Bureau of Land Management
Bureau of Reclamation
National Park Service
State Trust Land
Private Land

Photograph Information

Time of photograph:	10:08 PM
Date of photograph:	9-6-11
Weather condition:	Clear
Viewing direction:	North
Latitude:	35°44'58.02"N
Longitude:	114°25'2.20"W
Camera:	Nikon D700
Lens:	50mm
Lighting condition:	Nighttime
Nearest turbine:	NA

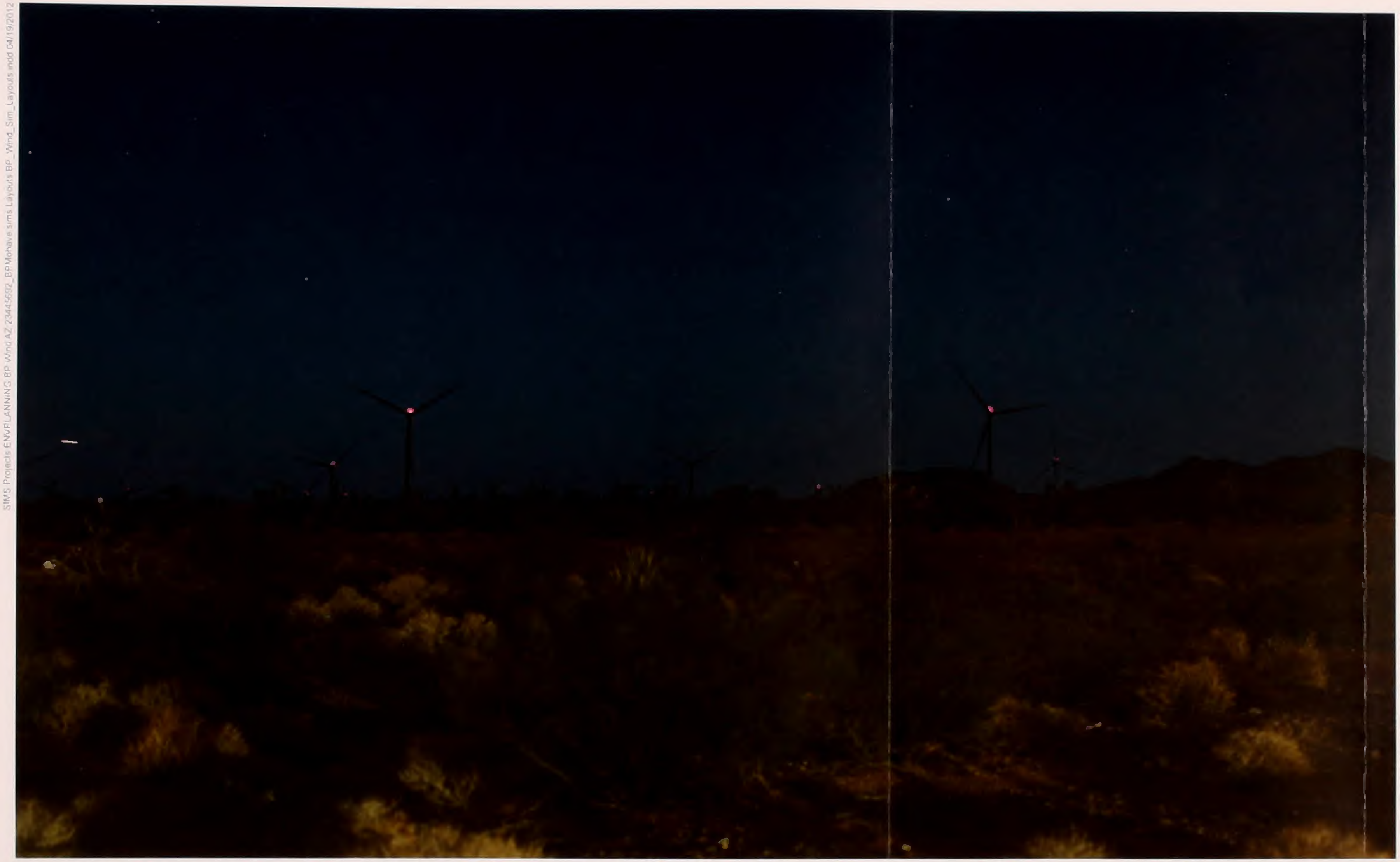
Existing Conditions
from Key Observation Point 27
11025 Indian Peak Road
Nighttime Conditions

Mohave County Wind Project
Mohave County, Arizona

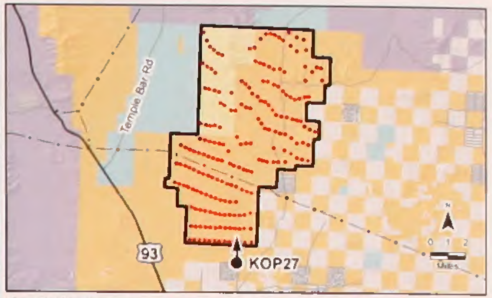
April 2012

Figure D-6(g)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/19/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land

Photograph Information

Time of photograph:	10:08 PM
Date of photograph:	9-6-11
Weather condition:	Clear
Viewing direction:	North
Latitude:	35°44'58.02"N
Longitude:	114°25'2.20"W
Camera:	Nikon D700
Lens:	50mm
Lighting condition:	Nighttime
Nearest turbine:	1.2 Miles

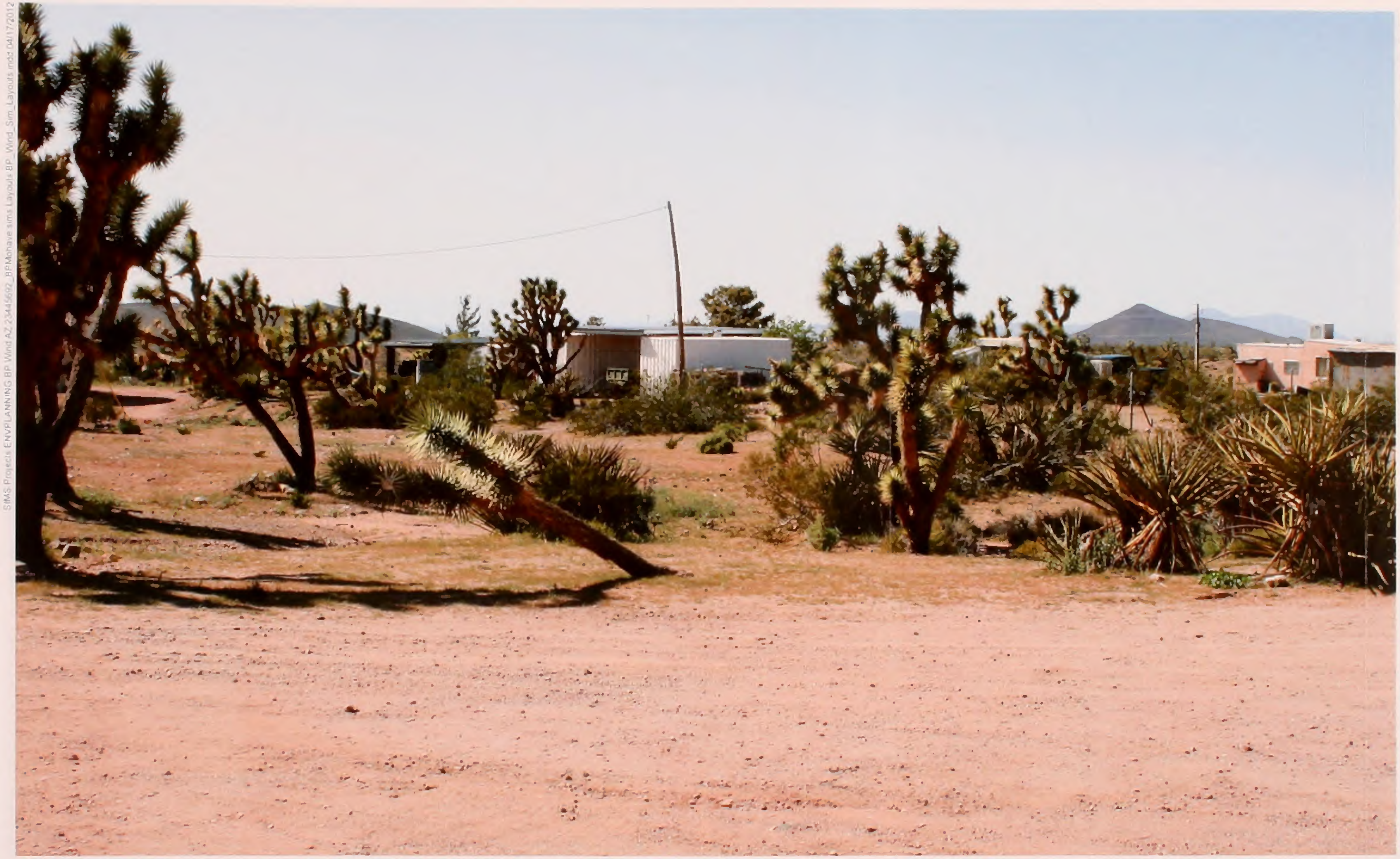
Simulation of Alternative A from Key Observation Point 27 11025 Indian Peak Road Nighttime Conditions

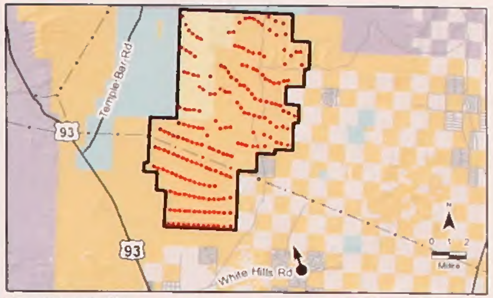
Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-6(h)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.mxd 04/17/2012





Viewpoint Location Map

Legend

- Key Observation Point
- ▭ Wind Farm Site
- · Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

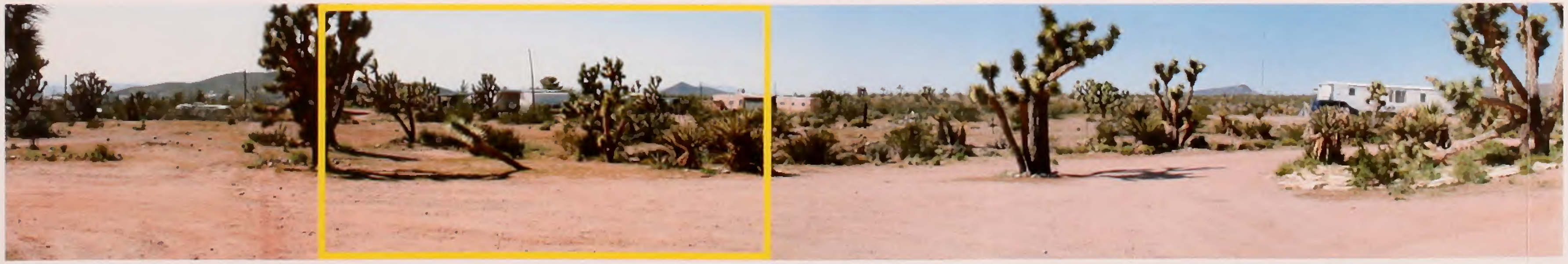
Surface Management

- 🟨 Bureau of Land Management
- 🟨 Bureau of Reclamation
- 🟪 National Park Service
- 🟦 State Trust Land
- Private Land

Photograph Information

Time of photograph:	4:09 PM
Date of photograph:	04-16-10
Weather condition:	Clear
Viewing direction:	Northwest
Latitude:	35°43'53.91"N
Longitude:	114°19'58.51"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Backlit
Nearest turbine:	NA

Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



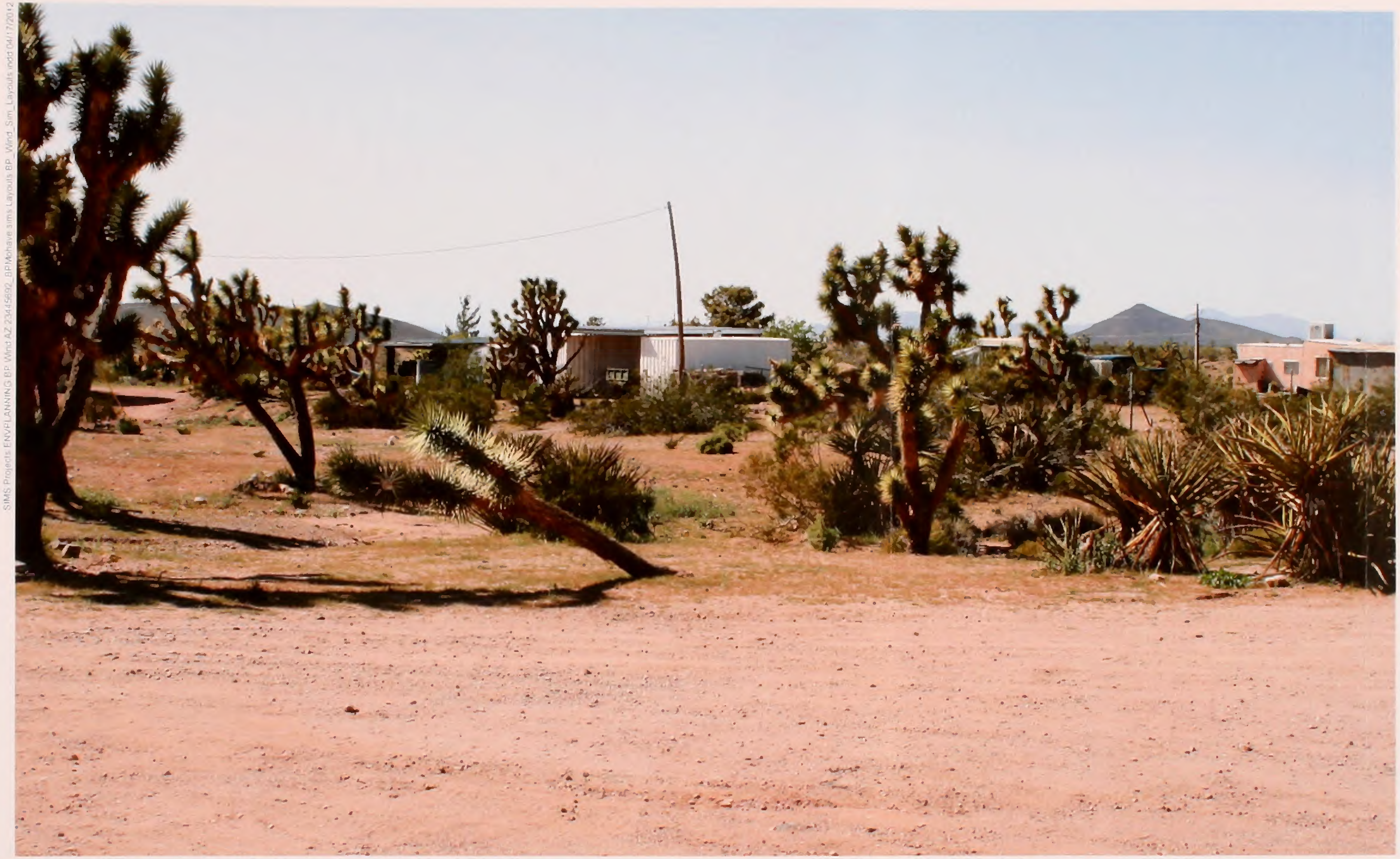
Existing Conditions from Key Observation Point 30 White Hills Community Center Backlit Conditions

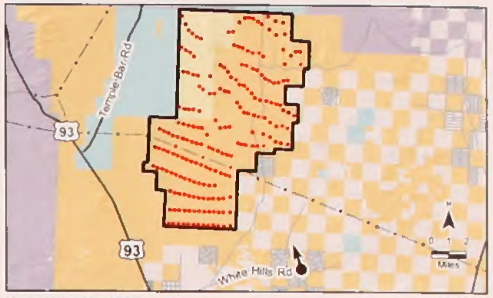
Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-7(a)

SIMS Projects ENVPLANNING BP Wind AZ 23445892_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012





Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

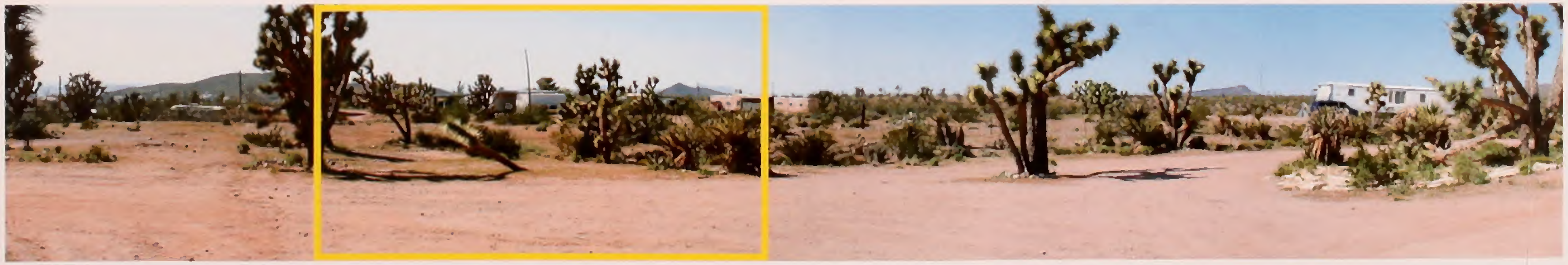
Surface Management

- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land

Photograph Information

Time of photograph:	4:09 PM
Date of photograph:	04-16-10
Weather condition:	Clear
Viewing direction:	Northwest
Latitude:	35°43'53.91"N
Longitude:	114°19'58.51"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Backlit
Nearest turbine:	4.6 Miles

Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



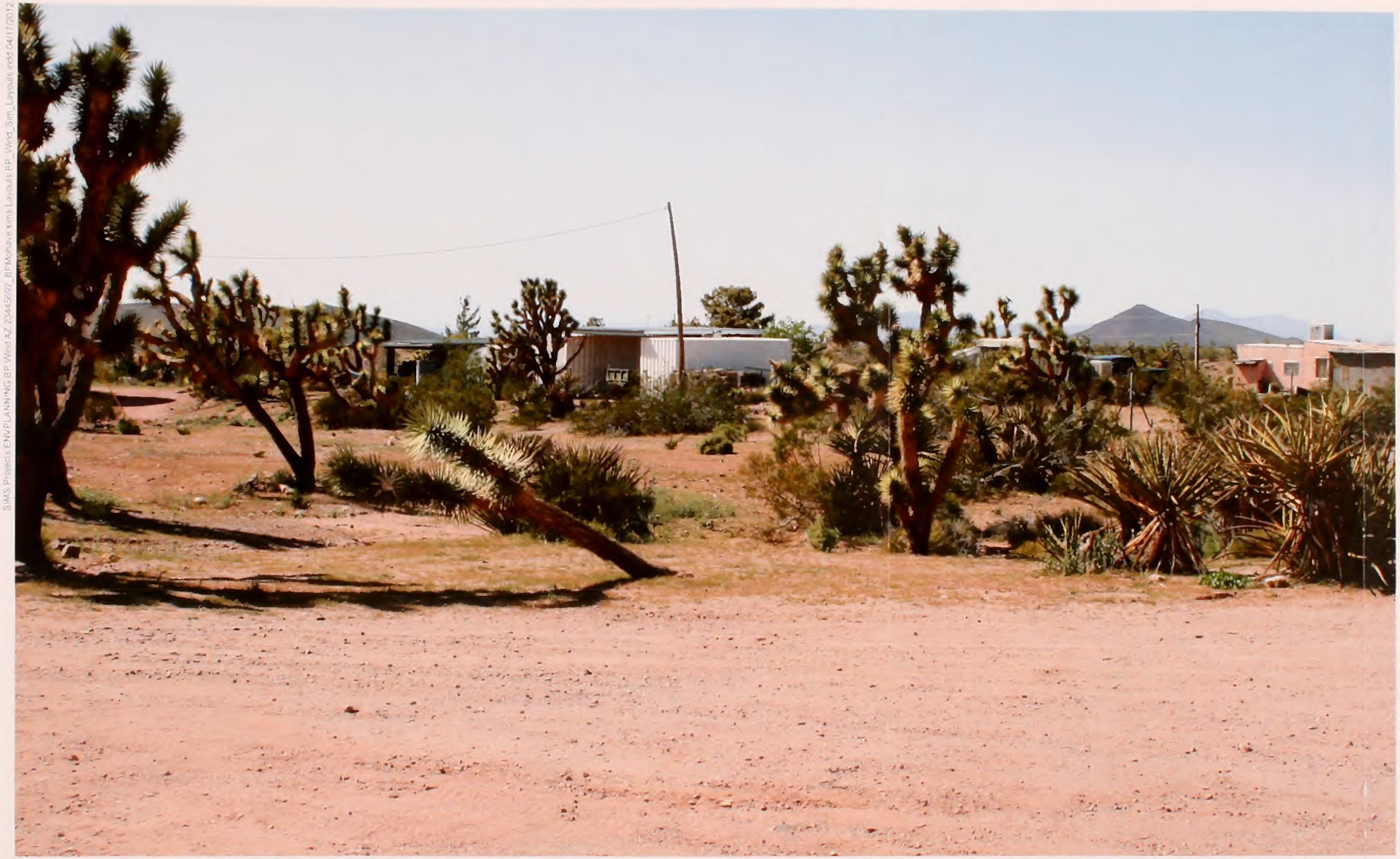
Simulation of Alternative A from Key Observation Point 30 White Hills Community Center Backlit Conditions

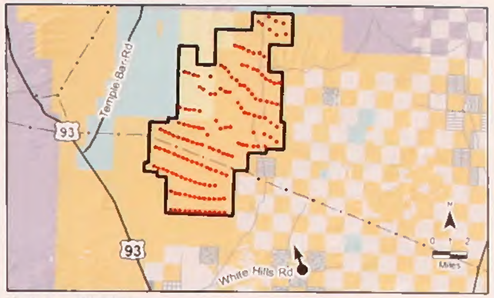
Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-7(b)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012





Viewpoint Location Map

Legend

↑	Key Observation Point
▭	Wind Farm Site
·	Proposed Wind Turbine Layout
-·-	Transmission Line
—	U.S. Highway
—	Road

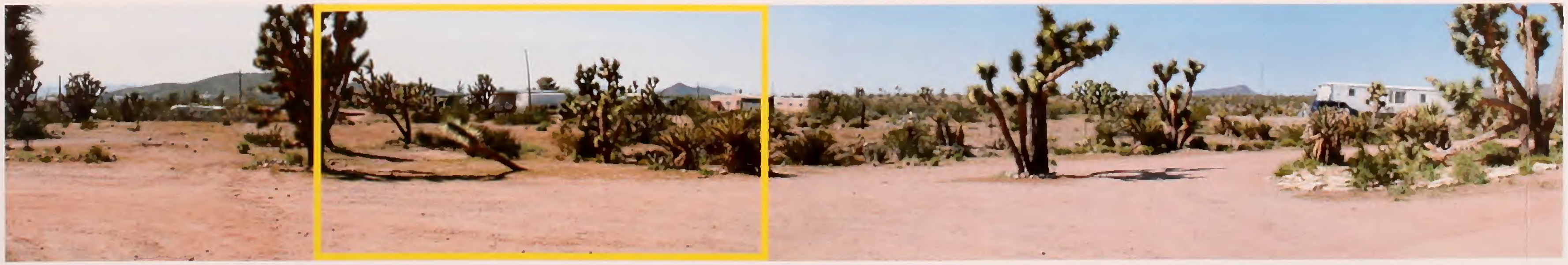
Surface Management

🟨	Bureau of Land Management
🟨	Bureau of Reclamation
🟪	National Park Service
🟦	State Trust Land
	Private Land

Photograph Information

Time of photograph:	4:09 PM
Date of photograph:	04-16-10
Weather condition:	Clear
Viewing direction:	Northwest
Latitude:	35°43'53.91"N
Longitude:	114°19'58.51"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Backlit
Nearest turbine:	5.3 Miles

Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



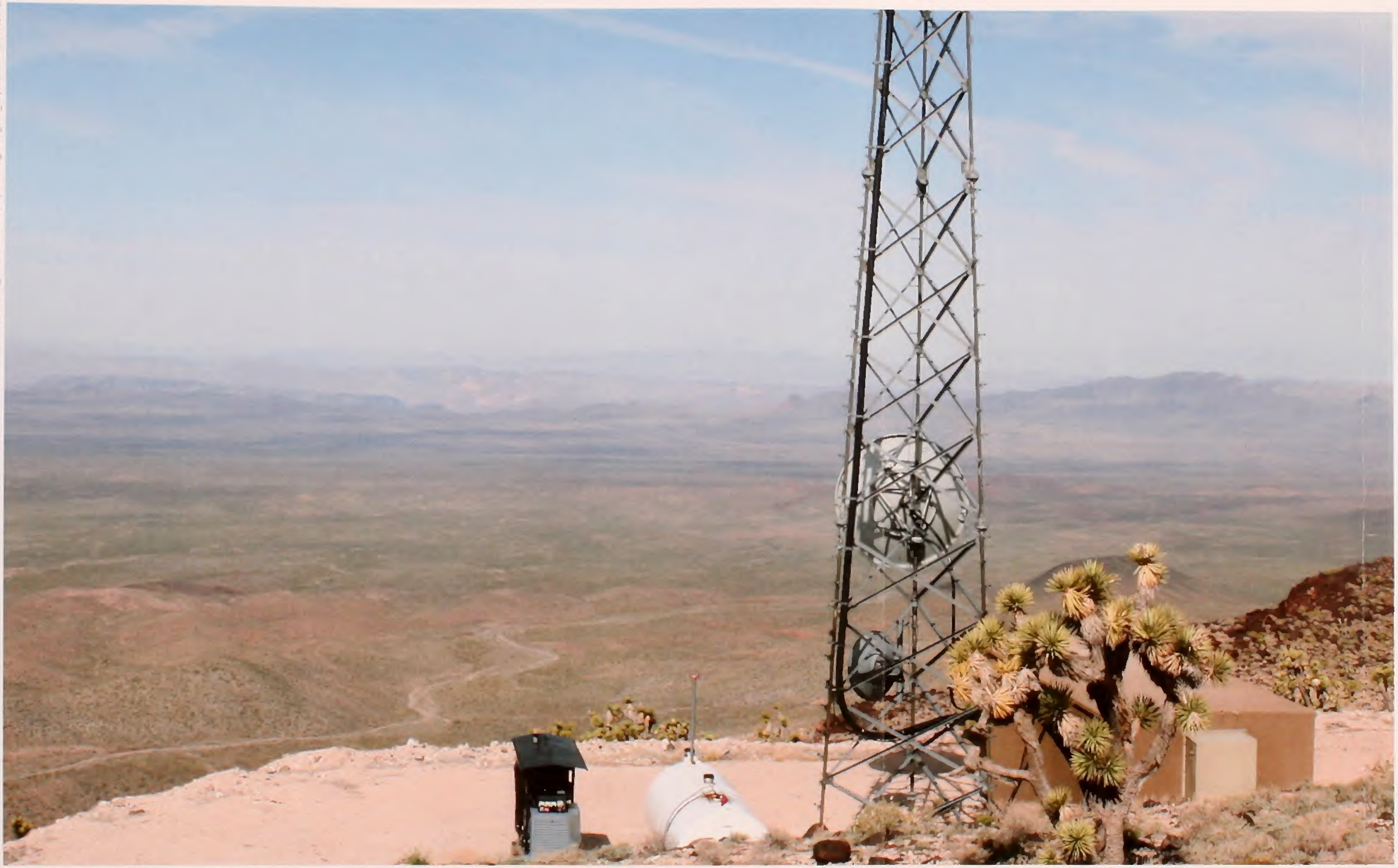
Simulation of Alternative C from Key Observation Point 30 White Hills Community Center Backlit Conditions

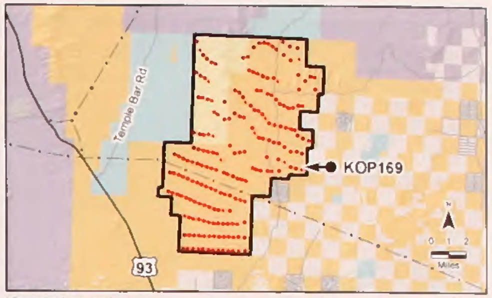
Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-7(c)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012





Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

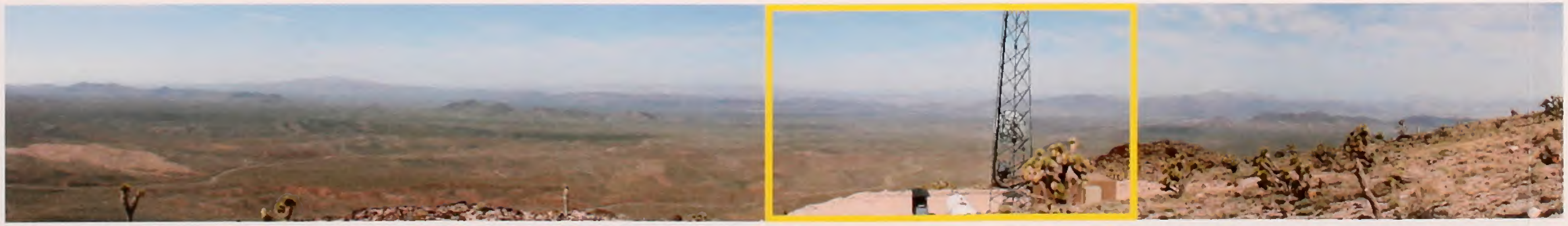
Surface Management

- 🟨 Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land

Photograph Information

Time of photograph:	10:09 AM
Date of photograph:	04-15-10
Weather condition:	Partly Cloudy
Viewing direction:	West
Latitude:	35°50'10.90"N
Longitude:	114°19'14.14"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Frontlit
Nearest turbine:	NA

Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



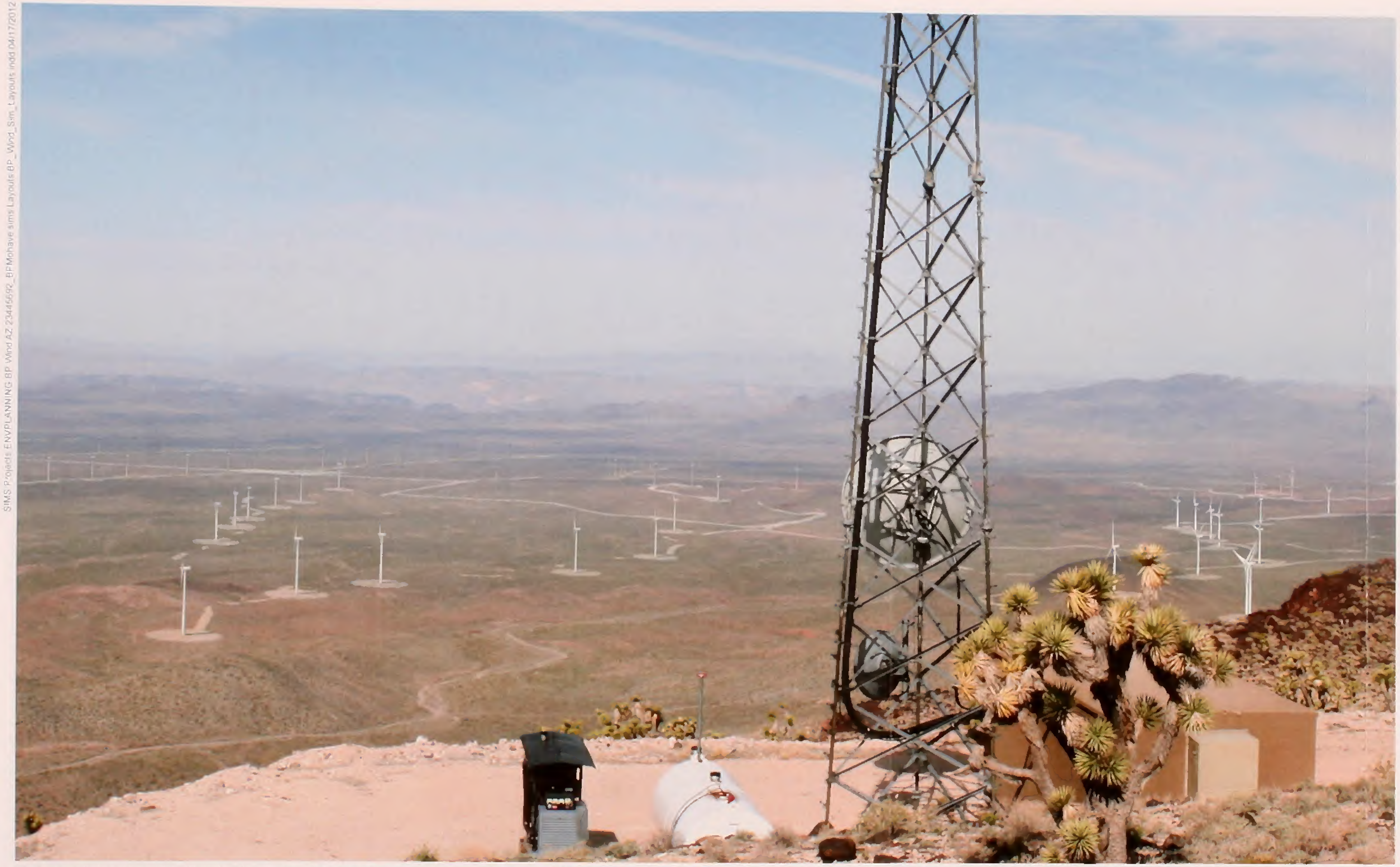
Existing Conditions from Key Observation Point 169 Senator Mountain Frontlit Conditions

Mohave County Wind Project
Mohave County, Arizona

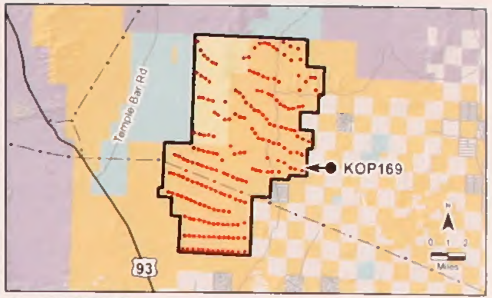
April 2012

Figure D-8(a)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BFMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Viewpoint Location Map

Legend

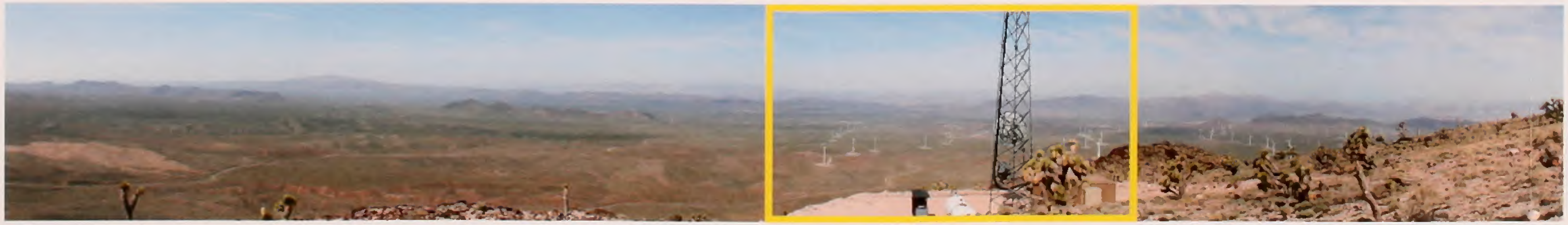
- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land

Photograph Information

Time of photograph:	10:09 AM
Date of photograph:	04-15-10
Weather condition:	Partly Cloudy
Viewing direction:	West
Latitude:	35°50'10.90"N
Longitude:	114°19'14.14"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Frontlit
Nearest turbine:	1.7 Miles



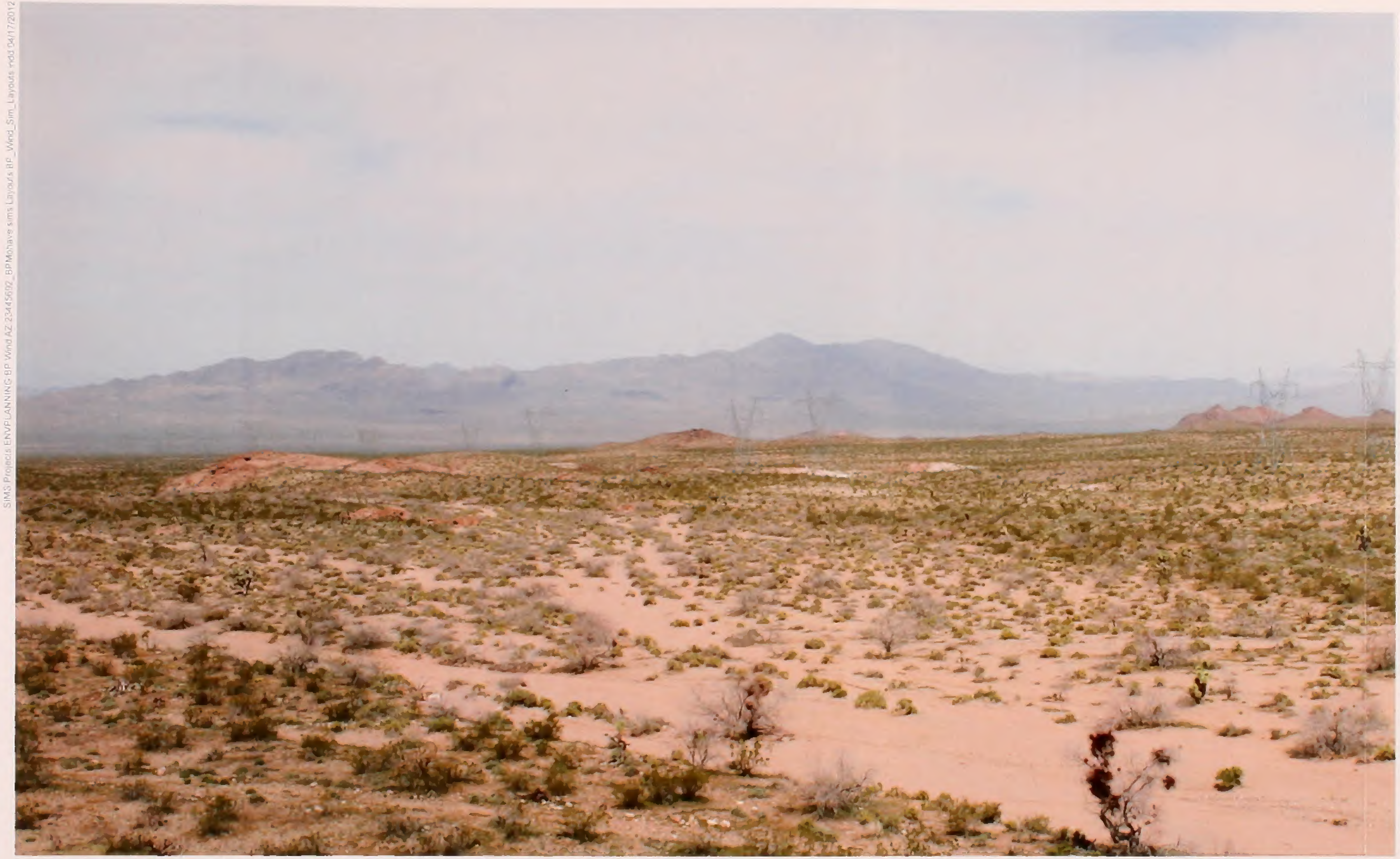
Simulation of Alternative A
from Key Observation Point 169
Senator Mountain
Frontlit Conditions

Mohave County Wind Project
Mohave County, Arizona

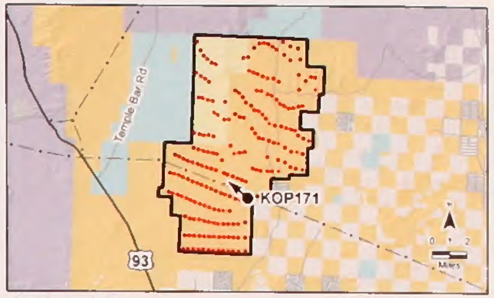
April 2012

Figure D-8(b)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Viewpoint Location Map

Legend

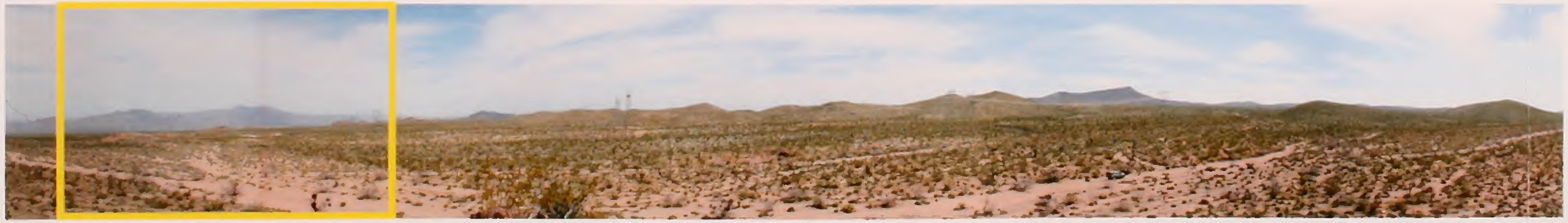
- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- 🟧 Bureau of Land Management
- 🟨 Bureau of Reclamation
- 🟪 National Park Service
- 🟦 State Trust Land
- Private Land

Photograph Information

Time of photograph:	11:48 AM
Date of photograph:	04-15-10
Weather condition:	Partly Cloudy
Viewing direction:	Northwest
Latitude:	35°48'32.85"N
Longitude:	114°24'8.24"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Frontlit
Nearest turbine:	NA



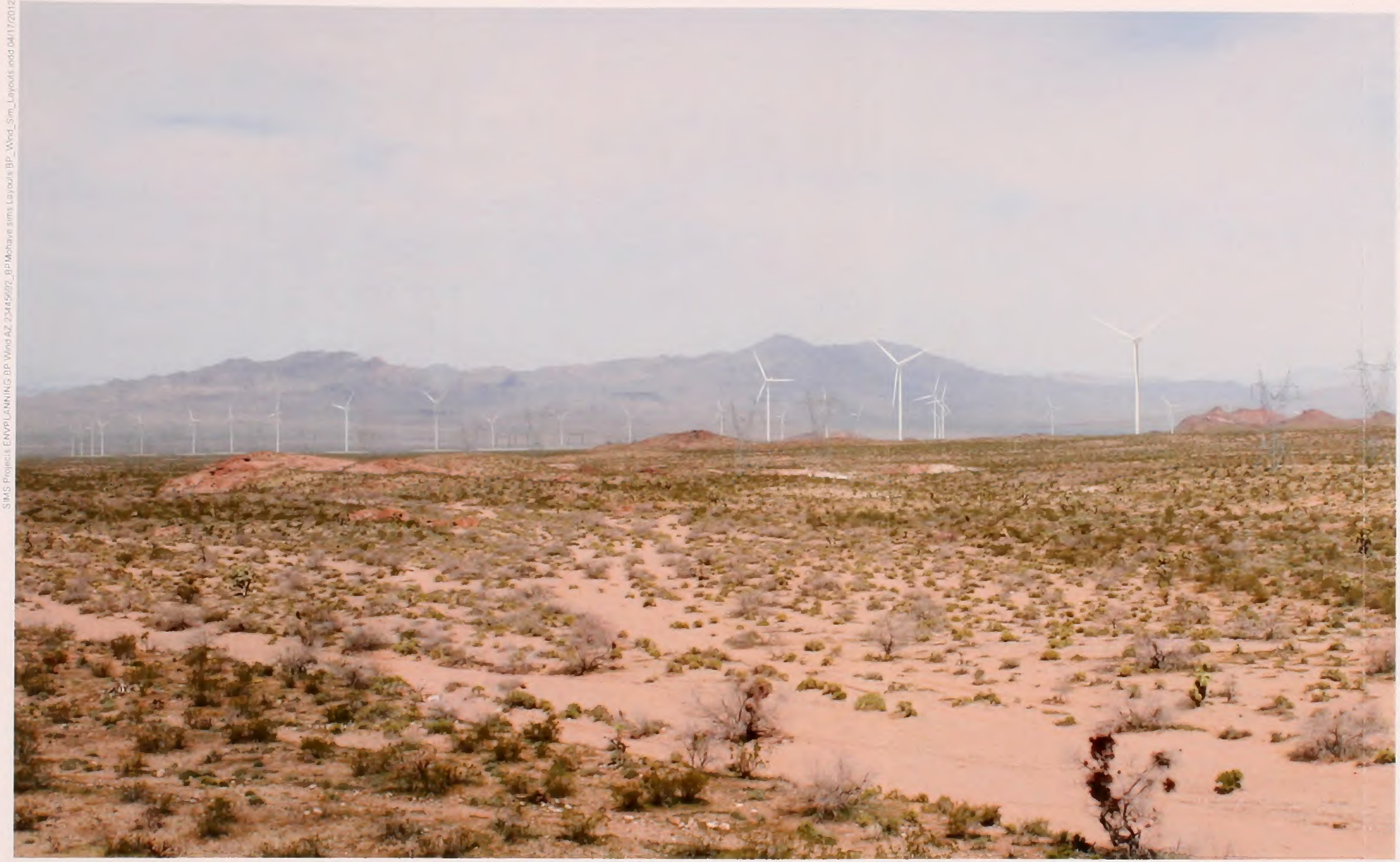
Existing Conditions from Key Observation Point 171 Mata Thija Frontlit Conditions

Mohave County Wind Project
Mohave County, Arizona

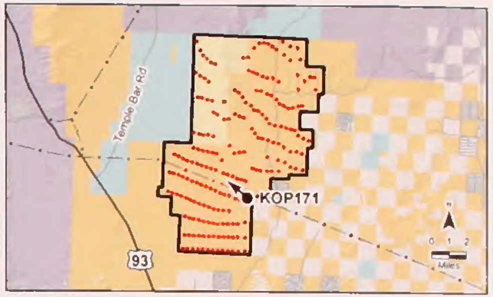
April 2012

Figure D-9(a)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway
- Road

Surface Management

- Bureau of Land Management
- Bureau of Reclamation
- National Park Service
- State Trust Land
- Private Land

Photograph Information

Time of photograph:	11:48 AM
Date of photograph:	04-15-10
Weather condition:	Partly Cloudy
Viewing direction:	Northwest
Latitude:	35°48'32.85"N
Longitude:	114°24'8.24"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Frontlit
Nearest turbine:	0.9 Mile

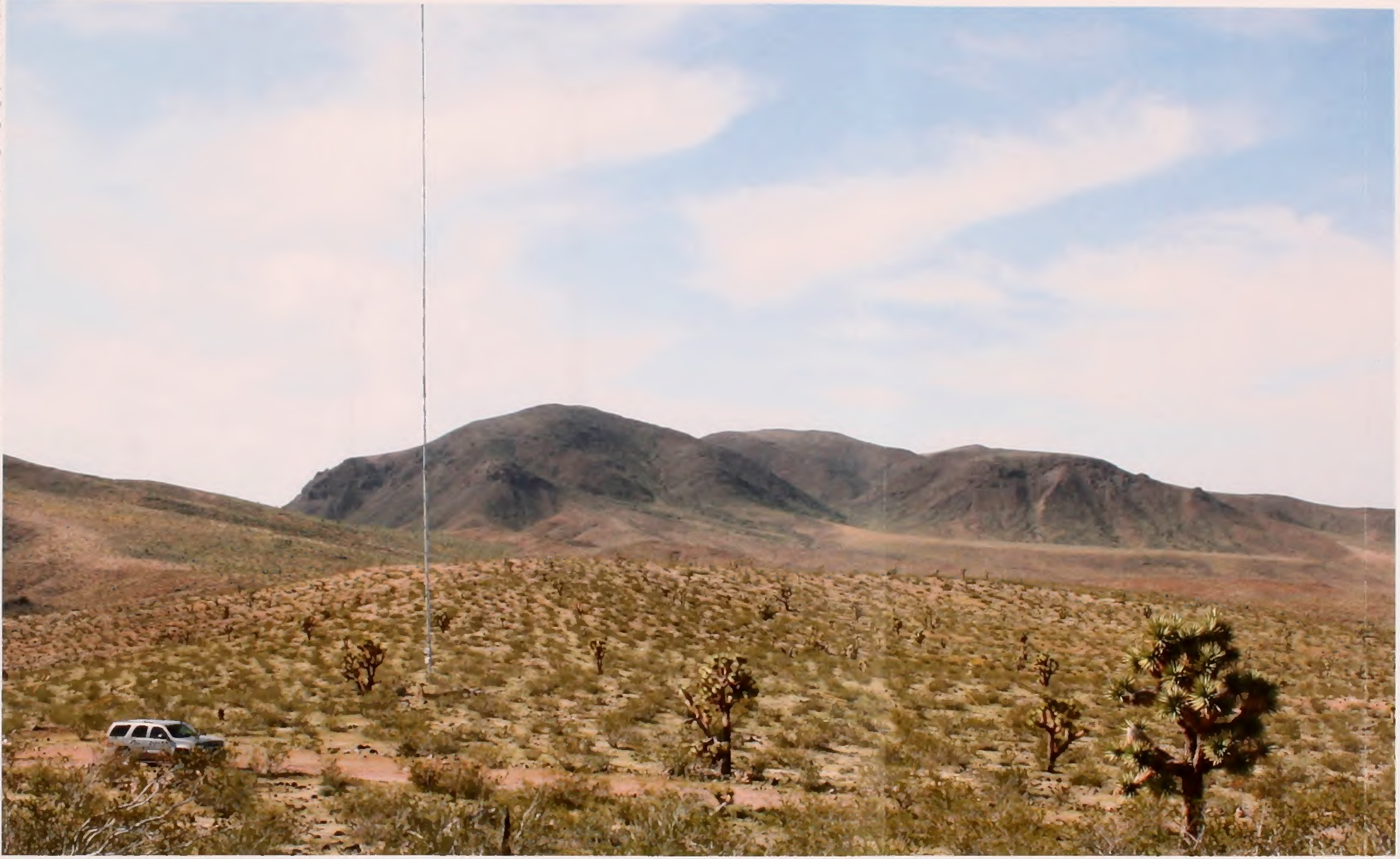
Simulation of Alternative A from Key Observation Point 171 Mata Thija Frontlit Conditions

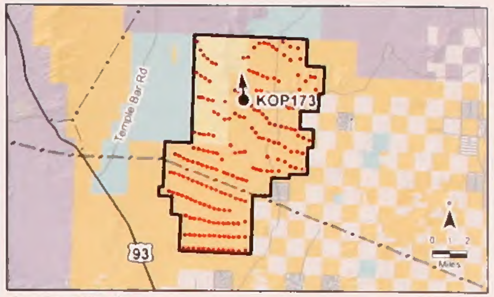
Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-9(b)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave.sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012





Viewpoint Location Map

Legend

- Key Observation Point
- ▭ Wind Farm Site
- • Proposed Wind Turbine Layout
- ‐ · ‐ Transmission Line
- — U.S. Highway

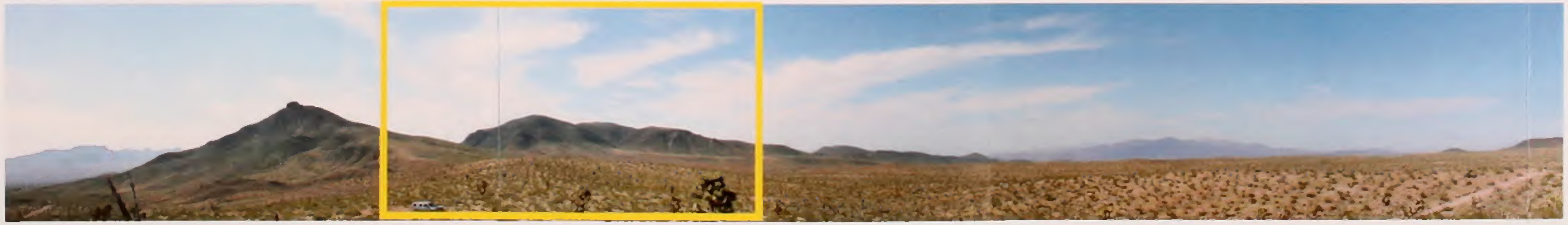
Surface Management

- 🟨 Bureau of Land Management
- 🟪 National Park Service
- 🟨 Bureau of Reclamation
- 🟦 State Trust Land
- ☐ Private Land

Photograph Information

Time of photograph: 4:04 PM
Date of photograph: 04-15-10
Weather condition: Partly Cloudy
Viewing direction: Northwest
Latitude: 35°53'13.35"N
Longitude: 114°24'34.05"W
Camera: Canon Rebel EOS XT
Lens: 50mm
Lighting condition: Sidelit
Nearest turbine: NA

Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.



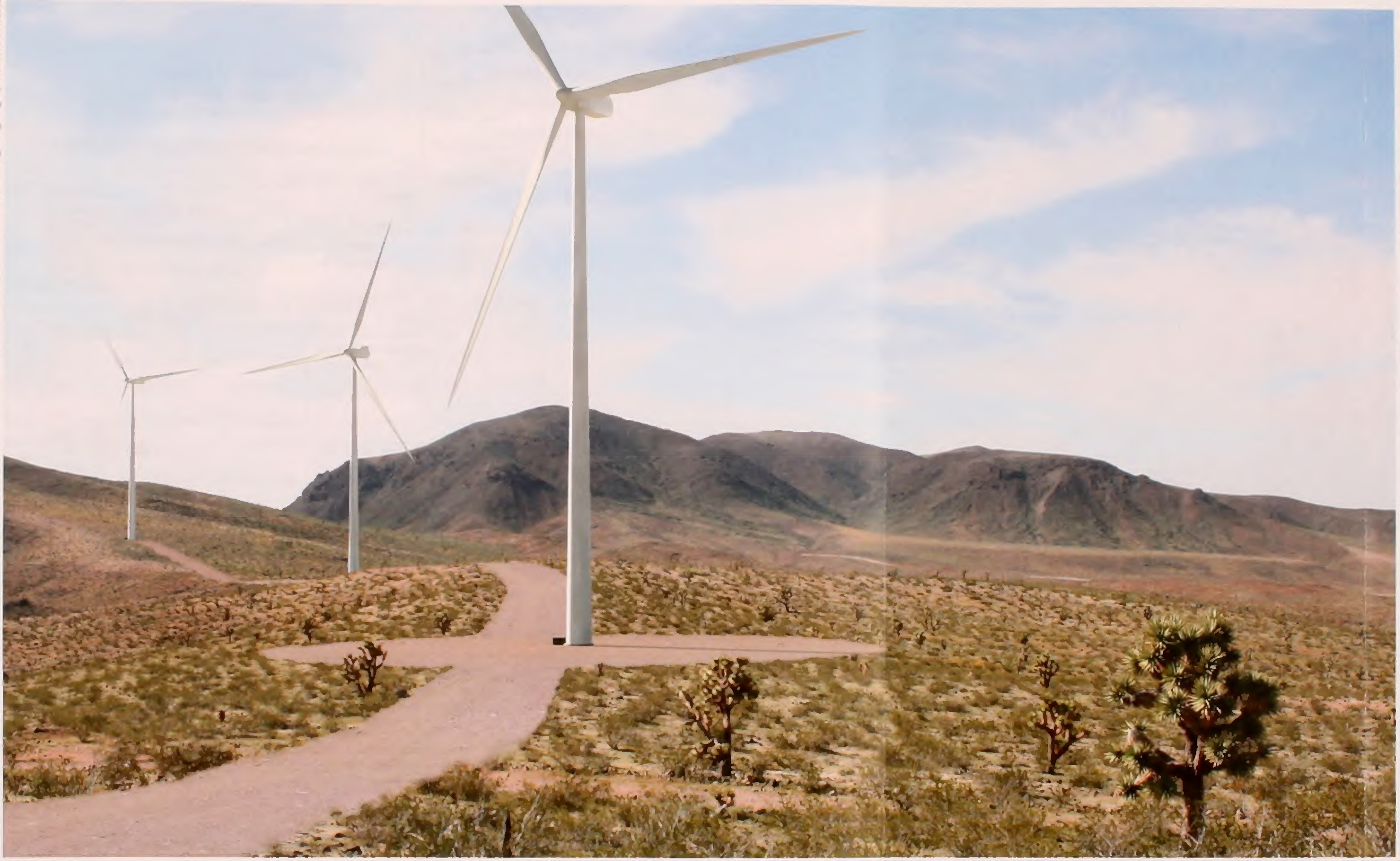
Existing Conditions
from Key Observation Point 173
Squaw Peak
Sidelit Conditions

Mohave County Wind Project
Mohave County, Arizona

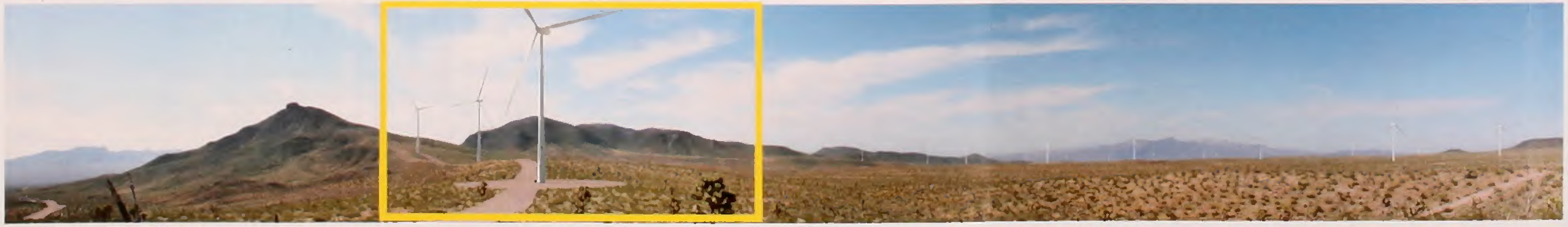
April 2012

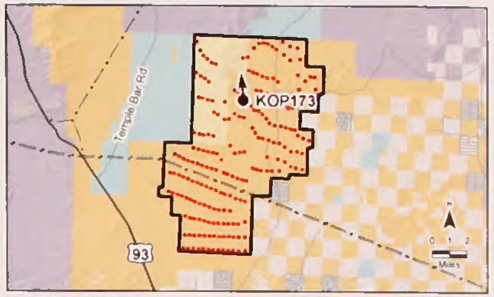
Figure D-10(a)

SIMS Projects ENVPLANNING BP Wind AZ 23445692_BPMohave sims Layouts BP_Wind_Sim_Layouts.indd 04/17/2012



Photograph is intended to be viewed 18 inches from viewer's eyes when printed on 11x17 paper. The photograph below has been cropped top and bottom to show a wide angle of view with the above photograph's area shown in yellow.





Viewpoint Location Map

Legend

- Key Observation Point
- Wind Farm Site
- Proposed Wind Turbine Layout
- Transmission Line
- U.S. Highway

Surface Management

- Bureau of Land Management
- National Park Service
- Bureau of Reclamation
- State Trust Land
- Private Land

Photograph Information

Time of photograph:	4:04 PM
Date of photograph:	04-15-10
Weather condition:	Partly Cloudy
Viewing direction:	Northwest
Latitude:	35°53'13.35"N
Longitude:	114°24'34.05"W
Camera:	Canon Rebel EOS XT
Lens:	50mm
Lighting condition:	Sidelit
Nearest turbine:	0.2 Mile

Simulation of Alternative A from Key Observation Point 173 Squaw Peak Sidelit Conditions

Mohave County Wind Project
Mohave County, Arizona

April 2012

Figure D-10(b)

Form 8400-04
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date November 23, 2009
District Colorado River
Resource Area Kingman Field Office
Activity (program) Realty

SECTION A. PROJECT INFORMATION

1. Project Name **BP Mojave County Wind Project**
2. Key Observation Point **KOP 1 – U.S. 93 at Householder Pass – Alt. A**
3. VRM Class **IV for BLM land and NA for Bureau of Reclamation land**
4. Location
Township 28N
Range 17W
Section 29
5. Location Sketch

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: Rolling, undulating Far: Bold, prominent, pyramidal	Near: Low, small with some taller interspersed vegetation. Far: Indistinct	Near: Tall, thin, angular Far: Tall, thin, angular
LINE	Near: Horizontal, flowing Far: Diagonal and horizontal with mountainous silhouettes	Near: Not present Far: Not present	Near: Vertical, horizontal, geometric Far: Vertical, horizontal, geometric
COLOR	Near: Brown, light tan Far: Brown, dark gray with bluish hues caused by atmospheric conditions	Near: Olive, green, brown, tan Far: Brown hues, indistinct	Near: Dark gray with light chromas Far: Dark gray with light chromas
TEXTURE	Near: Smooth to medium Far: Course, random	Near: Stippled, medium Far: Indistinct	Near: Uniform, smooth Far: Uniform, smooth

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: No change Far: Possible simple geometric shapes created by cut/fill for pads and roads	Near: No Change Far: Linear	Near: No change Far: Tall, symetrical, geometric, ordered, rotating
LINE	Near: No Change Far: Horizontal, broken to continuous	Near: No Change Far: Possibly bold to weak depending on viewing angle, straight to curving where visible, geometric where visible	Near: No change Far: Vertical, perpendicular, angular, geometric, ordered
COLOR	Near: No Change Far: Beige, tan. Depends upon color of gravel cover and depth of cut	Near: No Change Far: Contrasts created by vegetation clearing for roads and pads where visible	Near: No Change Far: White, contrasting
TEXTURE	Near: No Change Far: Smooth	Near: No Change Far: Directional, continuous or discontinuous depending on viewing angle	Near: No Change Far: Smooth, indistinct

SECTION D. CONTRAST RATING ☐ SHORT TERM ☒ LONG TERM

1.

DEGREE OF CONTRAST		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
ELEMENTS	Form			X			X			X			
	Line		X				X			X			
	Color			X			X			X			
	Texture			X				X				X	

2. Does project design meet visual resource management objectives?
☒ Yes ☐ No
(Explain on reverse side)

3. Additional mitigating measures recommended?
☒ Yes ☐ No
(Explain on reverse side)

Evaluator's Names	Date
Richard Stuhan	November 23, 2009
David Lawrence	May, 18, 2011
David Konopka	January 3, 2012

SECTION D. (Continued)

Comments from item 2.

BLM land in project area is Class IV.

Structure contrast is very strong due to the extent of the project area, the height, shape, and color of the turbines, and the motion of the rotating blades.

Vegetation contrast depends upon angle of view and success of vegetation restoration. Contrast could be weak to strong.

Land contrast depends upon depth of cuts and fills which are not anticipated to be deep.

Additional Mitigating Measures (See item 3)

Assure that revegetation is successful in the most visible locations. Use gravel on roads and pads that is the same color as surrounding surface soil.

Form 8400-04
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date
January 3, 2012

District
Colorado River

Resource Area
Kingman Field Office

Activity (program)
Realty

SECTION A. PROJECT INFORMATION

1. Project Name
BP Mojave County Wind Project

2. Key Observation Point
KOP 2 – Entrance to Lake Mead NRA – Alt. A

3. VRM Class
NA for Bureau of Reclamation land and Class IV for BLM land

4. Location

Township 30N
Range 21W
Section 23

5. Location Sketch

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: Flat to rolling, undulating, triangular Far: Bold, prominent, pyramidal, conical, flat	Near: Low, rounded Far: Indistinct	Near: Tall, vertical, rolling, linear, parallel Far: Tall, vertical, geometric, parallel
LINE	Near: Horizontal, diagonal, parallel Far: Diagonal, horizontal, curvilinear	Near: Horizontal, soft Far: Not present	Near: Vertical, angular Far: Vertical, angular, geometric
COLOR	Near: Light brown, reddish tan, light gray Far: Brown, dark brown, tan with bluish hues caused by atmospheric conditions	Near: Olive, dark and light green, brown, tan Far: Brown hues, indistinct	Near: Dark gray to black, dark brown Far: Gray, brown
TEX-TURE	Near: Course to indistinct, striated Far: Course to smooth, random, striated	Near: Stippled, medium Far: Medium to fine	Near: Smooth Far: Indistinct, smooth

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: Flat to rolling linear and curving cuts/fills for pads and roads Far: Simple linear shapes created by cut/fill for pads and roads	Near: Flat to rolling, linear Far: Linear	Near: Tall, vertical, symmetrical, ordered, rotating Far: Tall, vertical, symetrical, ordered, rotating
LINE	Near: Horizontal to diagonal, straight to curving Far: Horizontal to diagonal, straight to curving	Near: Horizontal to diagonal, straight to curving Far: Horizontal to slightly diagonal, straight to slightly curving	Near: Vertical, perpendicular, angular, ordered Far: Vertical, perpendicular, angular, ordered
COLOR	Near: Light tan. Depends upon color of gravel cover and depth of cut Far: Light tan. Depends upon color of gravel cover and depth of cut	Near: Contrast between soil/gravel in cleared areas and vegetation Far: Contrast between soil/gravel in cleared areas and vegetation	Near: White, contrasting Far: White, contrasting
TEX-TURE	Near: Fine to medium Far: Fine	Near: Directional Far: Directional	Near: Smooth Far: Smooth, indistinct

SECTION D. CONTRAST RATING ☐ SHORT TERM ☒ LONG TERM

1.

DEGREE OF CONTRAST		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
ELEMENTS	Form		X			X				X			
	Line	X				X				X			
	Color			X		X				X			
	Texture			X			X					X	

2. Does project design meet visual resource management objectives?
☒ Yes ☐ No
(Explain on reverse side)

3. Additional mitigating measures recommended?
☒ Yes ☐ No
(Explain on reverse side)

Evaluator's Names Date
David Konopka January 3, 2012

SECTION D. (Continued)

Comments from item 2.

BLM land in project area is Class IV.

Structure contrast is very strong due to the extent of the project area, the height, shape, and color of the turbines, and the motion of the rotating blades. There are mainly color and form contrasts between the turbines and the existing utility poles and transmission towers.

Vegetation contrast is strong due to distance and viewing angle

Land contrast depends upon depth of cuts and fills which are not anticipated to be deep.

Additional Mitigating Measures (See item 3)

Assure that revegetation is successful in the most visible locations. Use gravel on roads and pads that is the same color as surrounding surface soil.

Eliminating the rows on the north end could slightly lessen the overall contrast, but it would still remain high.

Form 8400-04
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date: November 23, 2009
District: Colorado River
Resource Area: Kingman Field Office
Activity (program): Realty

SECTION A. PROJECT INFORMATION

1. Project Name: **BP Mojave County Wind Project**
2. Key Observation Point: **KOP 4 – Temple Bar Road – Alt.A**
3. VRM Class: **NA for Bureau of Reclamation land and Class IV for BLM land**
4. Location
Township 28N
Range 17W
Section 29
5. Location Sketch

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: Flat to rolling, undulating Far: Bold, prominent, pyramidal, conical	Near: Low Far: Indistinct	Near: Tall, vertical Far: Tall, vertical
LINE	Near: Not present Far: Diagonal and curvilinear	Near: Horizontal Far: Not present	Near: Vertical, angular, geometric Far: Vertical, angular, geometric
COLOR	Near: Light brown, tan Far: Brown, dark brown, tan with bluish hues caused by atmospheric conditions	Near: Olive, dark and light green, brown Far: Brown hues, indistinct	Near: Dark gray to black Far: Dark gray to black
TEXTURE	Near: Course to indistinct Far: Course, random, striated	Near: Stippled, medium Far: Patchy	Near: Indistinct, smooth Far: Indistinct, smooth

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: No change Far: Simple geometric shapes created by cut/fill for pads and roads	Near: No Change Far: Linear	Near: No change Far: Tall, vertical, symetrical, geometric, ordered, rotating
LINE	Near: No Change Far: Horizontal to diagonal, straight to curving	Near: No Change Far: Horizontal to diagonal, straight to curving	Near: No Change Far: Vertical, perpendicular, angular, geometric, ordered
COLOR	Near: No Change Far: Light tan	Near: No Change Far: Contrast between soil/gravel in cleared areas and vegetation	Near: No Change Far: White, contrasting
TEXTURE	Near: No Change Far: Smooth	Near: No Change Far: Discontinuous	Near: No Change Far: Smooth, indistinct

SECTION D. CONTRAST RATING ☐ SHORT TERM ☒ LONG TERM

1.

DEGREE OF CONTRAST	LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
ELEMENTS	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form			X			X			X			
Line		X				X			X			
Color			X			X			X			
Texture			X				X				X	

2. Does project design meet visual resource management objectives? ☒ Yes ☐ No
(Explain on reverse side)

3. Additional mitigating measures recommended? ☒ Yes ☐ No
(Explain on reverse side)

Evaluator's Names	Date
Richard Stuhan	November 23, 2009
David Konopka	January 3, 2012

SECTION D. (Continued)

Comments from item 2.

BLM land in project area is Class IV.

Structure contrast is very strong due to the extent of the project area, the height, shape, and color of the turbines, and the motion of the rotating blades.

Vegetation contrast depends upon angle of view and success of vegetation restoration. Contrast could be weak to strong.

Land contrast depends upon depth of cuts and fills which are not anticipated to be deep.

Additional Mitigating Measures (See item 3)

Assure that revegetation is successful in the most visible locations. Use gravel on roads and pads that is the same color as surrounding surface soil.

The white cliffs to the north are a relatively unique scenic feature in the area and closer to Lake Mead NRA. Eliminating the rows on the north end could slightly lessen the overall contrast, but it would still remain high.

Form 8400-04
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date: November 23, 2009
District: Colorado River
Resource Area: Kingman Field Office
Activity (program): Realty

SECTION A. PROJECT INFORMATION

1. Project Name
BP Mojave County Wind Project
2. Key Observation Point
KOP 7 – Kiosk on Temple Basin – Alt. A
3. VRM Class
Looking towards BLM Class IV
4. Location
Township 28N
Range 17W
Section 29
5. Location Sketch

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: Rolling, undulating Far: Prominent, rolling	Near: Low, short Far: Indistinct	Near: None in view towards project Far: Linear, thin
LINE	Near: Horizontal, diagonal Far: Curvilinear with mountainous silhouettes	Near: Not present Far: Not present	Near: None Far: Vertical, angular, simple
COLOR	Near: Medium tan, beige Far: Grays and tans with bluish hues caused by atmospheric conditions	Near: Olive, gold, brown Far: Brown hues, indistinct	Near: None Far: Brown
TEX-TURE	Near: Stippled, medium Far: Medium	Near: Stippled, patchy Far: Indistinct	Near: None Far: Indistinct, smooth

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: No change Far: Possible linear shapes created by cut/fill for pads and roads	Near: No Change Far: No Change	Near: No change Far: Tall, vertical, symetrical, geometric, angular, ocillating
LINE	Near: No Change Far: possible horizontal lines created by cut/fill for pads and roads	Near: No Change Far: No Change	Near: No Change Far: Vertical, angular, geometric, ordered
COLOR	Near: No Change Far: Light tan and gray	Near: No Change Far: No Change	Near: No Change Far: White, contrasting
TEX-TURE	Near: No Change Far: Smooth	Near: No Change Far: No Change	Near: No Change Far: Smooth, indistinct

SECTION D. CONTRAST RATING ☐ SHORT TERM ☒ LONG TERM

1.

DEGREE OF CONTRAST	LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
ELEMENTS	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form				X			X			X		
Line			X			X			X			
Color			X			X				X		
Texture				X			X				X	

2. Does project design meet visual resource management objectives?
☒ Yes ☐ No
(Explain on reverse side)

3. Additional mitigating measures recommended?
☒ Yes ☐ No
(Explain on reverse side)

Evaluator's Names	Date
Richard Stuhan	November 23, 2009
David Konopka	January 3, 2012

SECTION D. (Continued)

Comments from item 2.

BLM land in project area is Class IV.

Structure contrast is moderate because of the distance and the narrower view of the project. Topography hides the lower portions of the turbines.

Vegetation contrasts would only be visible on the hills, and at this distance are expected to be moderate to weak.

Land contrasts would only be visible on the hills and are expected to be weak to none at this distance because the cuts and fills are not anticipated to be deep.

Additional Mitigating Measures (See item 3)

Assure that revegetation is successful in the most visible locations. Use gravel on roads and pads that is the same color as surrounding surface soil.

Removing about ten of the most visible turbines would reduce the structure contrast within the landscape.

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(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date: November 23, 2009
District: Colorado River
Resource Area: Kingman Field Office
Activity (program): Realty

SECTION A. PROJECT INFORMATION

1. Project Name: **BP Mojave County Wind Project**
2. Key Observation Point: **KOP 13 – Rosie's Den on U.S. 93 – Alt. A**
3. VRM Class: **Looking into Class IV**
4. Location: Township 28N, Range 17W, Section 29
5. Location Sketch

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: Rolling, undulating Far: Bold, prominent, pyramidal, angular, numerous silhouettes	Near: Low, small with some taller interspersed vegetation. Far: Indistinct	Near: Tall, thin, angular Far: Angular, not very apparent
LINE	Near: Horizontal, flowing Far: Diagonal, angular, and horizontal with mountainous silhouettes	Near: Horizontal undulating lines with a digitate edge Far: Not apparent	Near: Vertical, geometric, horizontal, ordered, with divergent bands Far: Geometric and not very apparent
COLOR	Near: Brown, gray, light tan Far: Brown, burnt and raw sienna, dark gray with red hues and bluish hues caused by atmospheric conditions	Near: Olive, green, brown, tan Far: Brown and sienna hues, indistinct	Near: White and green with light chromas Far: Not present
TEX-TURE	Near: Smooth to medium Far: Course, random	Near: Stippled, medium Far: Indistinct to smooth	Near: Uniform, smooth Far: Not apparent

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: No change Far: Possible simple geometric shapes created by cut/fill for pads and roads	Near: No change Far: Linear	Near: No change Far: Tall, symetrical, geometric, ordered, rotating
LINE	Near: No change Far: Horizontal lines created by cuts and fills	Near: No change Far: Geometric and possibly linear lines created by vegetative clearing for roads and pads	Near: No change Far: Vertical, perpendicular, angular, geometric, ordered
COLOR	Near: No change Far: Beige, tan. Depends upon color of gravel cover and depth of cut	Near: No Change Far: Contrasts created by vegetation clearing for roads and pads	Near: No change Far: White, contrasting
TEX-TURE	Near: No change Far: Smooth	Near: No change Far: Bare areas are directional at this viewing height, ordered	Near: No change Far: Smooth, indistinct

SECTION D. CONTRAST RATING ☐ SHORT TERM ☒ LONG TERM

1\.

DEGREE OF CONTRAST		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
ELEMENTS	Form			X			X			X			
	Line		X			X				X			
	Color			X			X			X			
	Texture			X			X					X	

2. Does project design meet visual resource management objectives? ☒ Yes ☐ No
(Explain on reverse side)

3. Additional mitigating measures recommended? ☒ Yes ☐ No
(Explain on reverse side)

Evaluator's Names	Date
Richard Stuhan	November 23, 2009
David Konopka	January 3, 2012

SECTION D. (Continued)

Comments from item 2.

BLM land in project area is Class IV.

The road, road signs, and passing traffic are considered part of the "viewer platform" and are not a part of the evaluation.

For structure contrast, although there are light colored structures to each side of the project area, they are relatively horizontal. The turbine contrast is very strong due to the extent of the project area, the height, shape, and color of the turbines, and the motion of the rotating blades.

For vegetation contrast, due to the viewing angle and height relative to the project, the turbine pads may be more visible than the roads due to their width. The pads may appear to be linear.

Land contrast depends upon depth of cuts and fills which are not anticipated to be deep.

Additional Mitigating Measures (See item 3)

Assure that revegetation is successful in the most visible locations. Use gravel on roads and pads that is the same color as surrounding surface soil.

See additional contrast form for this KOP that evaluates the photographic simulation of gray turbines.

Form 8400-04
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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date	November 23, 2009
District	Colorado River
Resource Area	Kingman Field Office
Activity (program)	Realty

SECTION A. PROJECT INFORMATION

1. Project Name
BP Mojave County Wind Project

2. Key Observation Point
KOP 13 – Rosie's Den on U.S. 93 – Alt. A – Gray turbines

3. VRM Class
Looking into Class IV

4. Location
Township 28N
Range 17W
Section 29

5. Location Sketch

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: Rolling, undulating Far: Bold, prominent, pyramidal, angular, numerous silhouettes	Near: Low, small with some taller interspersed vegetation. Far: Indistinct	Near: Tall, thin, angular Far: Angular, not very apparent
LINE	Near: Horizontal, flowing Far: Diagonal, angular, and horizontal with mountainous silhouettes	Near: Horizontal undulating lines with a digitate edge Far: Not apparent	Near: Vertical, geometric, horizontal, ordered, with divergent bands Far: Geometric and not very apparent
COLOR	Near: Brown, gray, light tan Far: Brown, burnt and raw sienna, dark gray with red hues and bluish hues caused by atmospheric conditions	Near: Olive, green, brown, tan Far: Brown and sienna hues, indistinct	Near: White and green with light chromas Far: Not present
TEX-TURE	Near: Smooth to medium Far: Course, random	Near: Stippled, medium Far: Indistinct to smooth	Near: Uniform, smooth Far: Not apparent

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: No change Far: Possible simple geometric shapes created by cut/fill for pads and roads	Near: No change Far: Linear	Near: No change Far: Tall, symetrical, geometric, ordered, rotating
LINE	Near: No change Far: Horizontal lines created by cuts and fills	Near: No change Far: Geometric and possibly linear lines created by vegetative clearing for roads and pads	Near: No change Far: Vertical, perpendicular, angular, geometric, ordered
COLOR	Near: No change Far: Beige, tan. Depends upon color of gravel cover and depth of cut	Near: No Change Far: Contrasts created by vegetation clearing for roads and pads	Near: No change Far: BLM Shadow Gray for turbines, flashing white lights during day
TEX-TURE	Near: No change Far: Smooth	Near: No change Far: Bare areas are directional at this viewing height, ordered	Near: No change Far: Smooth, indistinct

SECTION D. CONTRAST RATING ☐ SHORT TERM ☒ LONG TERM

1.

DEGREE OF CONTRAST		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
ELEMENTS	Form			X			X			X			
	Line		X			X				X			
	Color			X		X					X		
	Texture			X			X					X	

2. Does project design meet visual resource management objectives?
☒ Yes ☐ No
(Explain on reverse side)

3. Additional mitigating measures recommended?
☒ Yes ☐ No
(Explain on reverse side)

Evaluator's Names Date
David Konopka January 3, 2012

SECTION D. (Continued)

Comments from item 2.

BLM land in project area is Class IV.

The road, road signs, and passing traffic are considered part of the "viewer platform" and are not a part of the evaluation.

For structure contrast, the gray turbines would not contrast as much in color with the vegetation and landforms as the white turbines would. The turbine contrast is still very strong due to the extent of the project area, the height and shape of the turbines, and the motion of the rotating blades.

For vegetation contrast, due to the viewing angle and height relative to the project, the turbine pads may be more visible than the roads due to their width. The pads may appear to be linear. The pad for the substation and switchyard would be visible as a long line.

Land contrast depends upon depth of cuts and fills which are not anticipated to be deep.

Additional Mitigating Measures (See item 3)

Assure that revegetation is successful in the most visible locations. Use gravel on roads and pads that is the same color as surrounding surface soil.

The gray turbines would have less of a color contrast compared to the white turbines. However, if the gray turbines are required to have continuously flashing white lights during the daytime, then the lights would attract more attention and provide more of an overall contrast than the white turbines.

Form 8400-04
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date
November 24, 2009

District
Colorado River

Resource Area
Kingman Field Office

Activity (program)
Realty

SECTION A. PROJECT INFORMATION

1. Project Name
BP Mojave County Wind Project

2. Key Observation Point
KOP 27 – 11025 Indian Peak Rd. – Alt. A

3. VRM Class
Looking into Class IV

4. Location
Township 28N
Range 17W
Section 29

5. Location Sketch

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: Gentle, undulating Far: Convex, diagonal, angular, bold and prominent	Near: Low, small with some tall interspersed, amorphous Far: Indistinct and stippled	Near: Small scale geometric Far: Indistinct
LINE	Near: Horizontal, undulating Far: Diagonal, pyramidal, angular with mountainous silhouettes	Near: Horizontal with bold diffuse edges Far: Indistinct	Near: Small scale vertical Far: Indistinct
COLOR	Near: Brown, sandy brown, light tan Far: Brown, Gray with raw sienna hues and bluish hues caused by atmospheric conditions	Near: Olive, brown, green and tan Far: Brown hues	Near: Gray Far: Not apparent
TEX-TURE	Near: Medium, directional Far: Medium to smooth	Near: Course and patchy Far: Indistinct, smooth	Near: Smooth Far: Indistinct

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: No change, cuts and fills for pads and roads not visible from this viewing angle Far: Simple geometric shapes created by cut/fill for pads and roads that might be visible to the west	Near: No change, vegtation disturbance is not visible from this viewing angle Far: Simple geometric shapes created by vegetative clearings for pads and roads that might be visible to the west	Near: Bold, ordered, vertical, rotating, angular Far: Bold, rotating, angular
LINE	Near: No change Far: Broken, possible horizontal lines created by cut/fill for pads and roads that might be visible to the west	Near: No change Far: Broken, possible horizontal lines created by vegetative clearing for pads and roads	Near: Bold, vertical, perpendicular, ordered, geometric Far: Vertical, perpendicular, ordered, geometric, circular motion
COLOR	Near: No change Far: Tan. Depends upon color of gravel cover and depth of cuts that might be visible to the west	Near: No change Far: Contrasts created by vegtation clearing for roads and pads might be visible to the west	Near: White, contrasting Far: White, contrasting
TEX-TURE	Near: No change Far: Scattered, smooth to fine that might be visible to the west	Near: No change Far: Directional and uniform bare areas might be visible to the west	Near: Smooth Far: Smooth

SECTION D. CONTRAST RATING ☐ SHORT TERM ☒ LONG TERM

1.

DEGREE OF CONTRAST	LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
ELEMENTS	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form		X				X			X			
Line			X			X			X			
Color			X				X		X			
Texture			X				X				X	

2. Does project design meet visual resource management objectives?
☒ Yes ☐ No
(Explain on reverse side)

3. Additional mitigating measures recommended?
☒ Yes ☐ No
(Explain on reverse side)

Evaluator's Names	Date
Richard Stuhan	November 24, 2009
David Konopka	January 3, 2012

SECTION D. (Continued)

Comments from item 2.

BLM land in project area is Class IV.

The structure contrast is very strong due to the extent of the project area, the height, shape, and color of the turbines, and the motion of the rotating blades.

Because of the rise in elevation of the topography in from of the residence, the land and vegetation changes are not visible. The topography decreases in elevation to the west so views from the street in front of the residence might show the ground disturbance of the project. Land contrast depends upon depth of the cuts and fills that are not anticipated to be deep.

Additional Mitigating Measures (See item 3)

Elimination of the closest row of turbines could slightly reduce the structure contrast, but the contrast would still be strong.

Form 8400-04
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date	April 16, 2010
District	Colorado River
Resource Area	Kingman Field Office
Activity (program)	Realty

SECTION A. PROJECT INFORMATION

1. Project Name **Mohave County Wind Farm Project**	4. Location Township 27N Range 19W Section 17	5. Location Sketch
2. Key Observation Point **KOP 30 – White Hills Community Center – Alt.A**		
3. VRM Class **View is towards Class IV**		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: Rolling, undulating, indistinct Far: Bold, prominent, numerous mountain silhouettes	Near: Low with taller interspersed vegetation, rough and scattered Far: Indistinct to stippled	Near: Vertical, horizontal, geometric, and angular Far: Vertical, horizontal, geometric, and angular
LINE	Near: Undulating, flowing Far: Diagonal, angular with mountainous silhouettes and strong horizon line	Near: Undulating lines with vertical clumps of more dominant vegetation and silhouettes Far: Undulating	Near: Vertical, horizontal, angular, and geometric Far: Vertical, horizontal, angular, and geometric
COLOR	Near: Brown, gray, light tan, red Far: Brown, burnt sienna, dark gray with red hues and bluish hues caused by atmospheric conditions	Near: Olive, green, brown, tan, gray Far: Brown and sienna hues, indistinct	Near: White, tan, green, olive Far: pink, tan, gray, white
TEX-TURE	Near: Medium to smooth Far: Smooth	Near: Stippled, course Far: Course to smooth	Near: Smooth Far: Smooth

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: No change Far: No change seen from this view	Near: No Change Far: No change seen from this view	Near: No change Far: Tall, symmetrical, geometric, ordered, rotating upper part of the turbines
LINE	Near: No change Far: No change	Near: No change Far: No change	Near: No change Far: Vertical, perpendicular, angular, geometric, ordered upper part of the turbines
COLOR	Near: No change Far: No change	Near: No Change Far: No change	Near: No change Far: White, contrasting upper part of the turbines
TEX-TURE	Near: No Change Far: No change	Near: No Change Far: No change	Near: No change Far: Smooth, indistinct upper part of the turbines

SECTION D. CONTRAST RATING ☐ SHORT TERM ☒ LONG TERM

1.

DEGREE OF CONTRAST	LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
ELEMENTS	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form				X				X			X	
Line				X				X			X	
Color				X				X			X	
Texture				X				X			X	

2. Does project design meet visual resource management objectives?
☒ Yes ☐ No
(Explain on reverse side)

3. Additional mitigating measures recommended?
☐ Yes ☒ No
(Explain on reverse side)

Evaluator's Names	Date
Robert Evans	April 16, 2010
David Konopka	January 3, 2012

Form 8400-04
(September 1985)

SECTION D. (Continued)

Comments from item 2.

BLM land in project area is Class IV.

Due to the topography, vegetation, and structures in the immediate foreground, only the tops of a few turbines could be visible in the distance, depending upon where the viewer stands in the parking lot.

Additional Mitigating Measures (See item 3)

Form 8400-04
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date	April 15, 2010
District	Colorado River
Resource Area	Kingman Field Office
Activity (program)	Realty

SECTION A. PROJECT INFORMATION

1. Project Name: **BP Mohave County Wind Project**
2. Key Observation Point: **KOP 169 – Senator Mountain – Alt. A**
3. VRM Class: **VRM IV**
4. Location
Township 28N
Range 19W
Section 4
5. Location Sketch

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: Rugged with angular forms Far: Undulating with simple geometric forms and silhouettes	Near: Low, rugged and patchy Far: Stippled and undulating	Near: Tall, vertical, geometric, and angular Far: Simple geometric forms
LINE	Near: Undulating and rugged Far: Undulating with mountainous silhouettes	Near: Dominant silhouettes Far: Stippled, evenly distributed	Near: Vertical, angular, geometric Far: Numerous swooping bands (roads)
COLOR	Near: Brown, light tan, gray, raw sienna Far: Brown, tan, red and dark gray with bluish hues caused by atmospheric conditions	Near: Olive, green, brown, tan (seasonally very green) Far: Olive, green, brown, tan (seasonally very green)	Near: Dark gray and metallic with light chromas and white Far: Metallic with light chroma and white
TEX-TURE	Near: Rugged Far: Smooth	Near: Course and rough Far: Smooth and stippled	Near: Smooth Far: Smooth

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: Simple geometric shapes and bands created by cut/fill for pads and roads Far: Simple geometric shapes and bands created by cut/fill for pads and roads	Near: Simple geometric forms and rounded and angular clearings Far: Simple geometric forms and rounded and angular clearings	Near: Vertical and angular Far: Tall, vertical, ordered, rotating motion
LINE	Near: Possible edges created by cut/fill Far: Horizontal lines and edges created by cut/fill	Near: Bold straight to curving and oval and rectangular lines created by clearings for roads and pads Far: Straight to curving and oval to horizontal lines created by clearings for roads and pads	Near: Vertical, perpendicular, angular, geometric, ordered Far: Vertical, perpendicular, angular, geometric, ordered, rotating motion
COLOR	Near: Beige to a tan and red hues Far: Beige to a tan and red hues	Near: Bold contrasting color due to the clearing of vegetation for roads and pads Far: Contrasting color due to the clearing of vegetation for roads and pads	Near: White, contrasting Far: White, contrasting
TEX-TURE	Near: Smooth Far: Smooth	Near: Patchy, uniform, ordered Far: Patchy, uniform, ordered	Near: Smooth Far: Smooth, indistinct

SECTION D. CONTRAST RATING ☐ SHORT TERM ☒ LONG TERM

1.

DEGREE OF CONTRAST	LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
ELEMENTS	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form			X		X				X			
Line		X			X				X			
Color			X		X				X			
Texture			X			X					X	

2. Does project design meet visual resource management objectives? ☒ Yes ☐ No
(Explain on reverse side)

3. Additional mitigating measures recommended? ☒ Yes ☐ No
(Explain on reverse side)

Evaluator's Names	Date
Robert Evans	April 15, 2010
David Konopka	January 3, 2012

SECTION D. (Continued)

Comments from item 2.

BLM land is Class IV.

The communication site is considered a "viewer platform" and is not a part of the evaluation.

The turbine contrast is very strong due to the extent of the project area, the height and shape of the turbines, and the motion of the rotating blades

Because of the height of the viewpoint, the vegetation contrast is very strong and can be seen for long distances. The pads for the switchyard and substations are visible.

Land contrast depends upon depth of cuts and fills which are not anticipated to be deep.

Additional Mitigating Measures (See item 3)

Assure that revegetation is successful especially closer to the viewpoint. Use gravel on roads and pads that is the same color as surrounding surface soil.

Form 8400-04
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date
April 15, 2010

District
Colorado River

Resource Area
Kingman Field Office

Activity (program)
Realty

SECTION A. PROJECT INFORMATION

1. Project Name **BP Mohave County Wind Project**	4. Location Township 28N Range 20W Section 15	5. Location Sketch
2. Key Observation Point **Points 171 – Mata Thija – Alt. A**		
3. VRM Class **VRM IV**		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: Rolling, undulating Far: Rugged with mountainous silhouettes	Near: Low, undulating, stippled Far: Stippled and undulating	Near: Tall, vertical, geometric, and angular Far: Angular, vertical, and geometric forms
LINE	Near: Undulating with simple weak edges Far: Undulating with silhouette lines and edges	Near: Undulating with weak edges, curving Far: Simple, weak digitate edges	Near: Vertical, angular, geometric, and swooping Far: Vertical, angular, geometric
COLOR	Near: Brown, light tan, red, raw sienna Far: Brown, tan, burnty and raw sienna with bluish hues caused by atmospheric conditions	Near: Olive, green, brown, tan, red (seasonally very green) Far: Olive, green, brown, tan, red (seasonally very green)	Near: Flat dull metallic Far: Flat metallic
TEX-TURE	Near: Rugged Far: Smooth	Near: Rugged, stippled, discontinuous Far: Smooth, stippled	Near: Smooth, matte Far: Smooth, matte

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: Simple geometric shapes and bands created by cut/fill for pads and roads Far: Simple geometric shapes and bands created by cut/fill for pads and roads	Near: Simple geometric forms and linear clearings Far: Simple geometric forms and linear clearings	Near: Vertical and angular, rotating Far: Tall, vertical, ordered, rotating motion
LINE	Near: Possible edges created by cut/fill Far: Horizontal lines created by cut/fill	Near: horizontal lines created by clearings for roads and pads Far: Indistinct but contrasting lines vegetative clearings by cut/fill for roads and pads	Near: Vertical, perpendicular, angular, ordered Far: Vertical, perpendicular, angular, ordered, rotating motion
COLOR	Near: Beige to tan with red hues Far: Beige to tan with red hues	Near: Indistinct but contrasting green color created by vegetation clearing for roads and pads Far: " "	Near: White, contrasting Far: White, contrasting
TEX-TURE	Near: Smooth Far: Smooth	Near: Patchy Far: Patchy, directional	Near: Smooth Far: Smooth, indistinct

SECTION D. CONTRAST RATING ☐ SHORT TERM ☒ LONG TERM

1.

DEGREE OF CONTRAST	LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
ELEMENTS	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form			X				X		X			
Line			X			X			X			
Color			X			X			X			
Texture			X				X				X	

2. Does project design meet visual resource management objectives?
☒ Yes ☐ No
(Explain on reverse side)

3. Additional mitigating measures recommended?
☒ Yes ☐ No
(Explain on reverse side)

Evaluator's Names	Date
Robert Evans	April 15, 2010
David Konopka	January 3, 2012

SECTION D. (Continued)

Comments from item 2.

BLM land in project area is Class IV.

For structure contrast, the turbines contrast in form, line, and color with the existing transmission lines. The turbines are a strong contrast ialso due to the extent of the project area, the height and shape of the turbines, and the motion of the rotating blades.

For vegetation contrast, due to the viewing angle the disturbances, including for the substation and switching yard complex appear to be linear.

Land contrast depends upon depth of cuts and fills which are not anticipated to be deep. The viewing angle would make the cuts and fills look linear.

Additional Mitigating Measures (See item 3)

Assure that revegetation is successful in the most visible locations. Use gravel on roads and pads that is the same color as surrounding surface soil.

Form 8400-04
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date
April 15, 2010

District
Colorado River

Resource Area
Kingman Field Office

Activity (program)
Realty

SECTION A. PROJECT INFORMATION

1. Project Name
Mohave County Wind Project

2. Key Observation Point
Points 173 – Squaw Peak – Alt. A

3. VRM Class
VRM IV

4. Location
Township 29N
Range 20W
Section 22

5. Location Sketch

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: Rugged, undulating Far: Rugged with numerous peaks and mountainous silhouettes	Near: Low, undulating, stippled/mottled Far: Stippled, uniform, and undulating	Near: Vertical, angular Far: Not apparent
LINE	Near: Undulating with angular edges Far: Angular and pyramidal with numerous silhouette lines	Near: Mottled and undulating/random Far: Simple, weak digitate edges	Near: Vertical, angular Far: Not apparent
COLOR	Near: Brown, light tan, red, gray/black Far: Brown, tan, burnt sienna with bluish hues caused by atmospheric conditions	Near: Olive, green, brown, tan, red (seasonally very green with purple and yellow) Far: “ “	Near: Dull/flat metallic Far: Not apparent
TEXTURE	Near: Rough/rugged Far: Smooth	Near: Rough Far: Smooth	Near: Smooth Far: Not apparent

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Near: Simple geometric and linear shapes created by cut/fill for pads and roads Far: Linear shapes created by cut/fill for pads and roads	Near: Simple geometric forms and oval clearings Far: Linear clearings	Near: Vertical and angular, rotating blades Far: Tall, vertical, ordered, rotating motion
LINE	Near: Possible horizontal to diagonal edges created by cut/fill Far: Horizontal lines created by cut/fill	Near: Curving, horizontal to diagonal lines created by clearings for roads and pads Far: Horizontal, broken straight to curving lines	Near: Vertical, angular, geometric, ordered Far: Vertical, perpendicular, angular, geometric, ordered, rotatingr motion
COLOR	Near: Beige to tan with red hues Far: Beige to tan and red hues	Near: vivid contrast between vegetation and soil/gravel surface Far: contrast between vegetation and soil/gravel surface	Near: White, contrasting Far: White, contrasting
TEXTURE	Near: Smooth Far: Smooth	Near: Patchy, directional, smooth Far: Patchy, smooth	Near: Smooth Far: Smooth, indistinct

SECTION D. CONTRAST RATING ☐ SHORT TERM ☒ LONG TERM

1. DEGREE OF CONTRAST — FEATURES

	LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
ELEMENTS	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form	X				X				X			
Line	X				X				X			
Color		X			X				X			
Texture		X				X				X		

2. Does project design meet visual resource management objectives?
☒ Yes ☐ No
(Explain on reverse side)

3. Additional mitigating measures recommended?
☒ Yes ☐ No
(Explain on reverse side)

Evaluator's Names	Date
Robert Evans	April 15, 2010
David Konopka	January 3, 2012

SECTION D. (Continued)

Comments from item 2.

BLM land is Class IV.

KOP is surrounded by turbines. KOP is on an existing road looking at proposed roads

Structure contrast is very strong due to the distance to the closest turbines, the extent of the project area, the height, shape, and color of the turbines, and the motion of the rotating blades.

Vegetation contrast is very strong close to the viewer. It is weak in the distance due to topography. The roads might be considered “viewer platforms” and not as negative an impact as the turbine pads.

Land contrast depends upon depth of cuts and fills which are not anticipated to be deep; however cuts and fills close to the viewer could be in strong contrast. Cuts and fills in the distance might not be seen due to topography.

Additional Mitigating Measures (See item 3)

Assure that revegetation is successful in the closest locations. Use gravel on roads and pads that is the same color as surrounding surface soil.

APPENDIX E

WIND POWER GEOPLANNER™
LICENSED MICROWAVE REPORT

Wind Power GeoPlanner™

Licensed Microwave Report

Mohave County Wind Farm

Prepared on Behalf of
BP Wind Energy North
America

August 25, 2011

COMSEARCH®
A CommScope Company

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1. Introduction

The use of wind energy, one of the oldest forms of harnessing a natural energy source, is now one of the world's fastest growing alternative energy sources. The United States is committed to the use of wind energy, and over the next several years billions of dollars will be spent on wind power projects. However, as new wind turbine generators are installed around the country, it is important to note that they may pose an interference threat to existing microwave systems and broadcast stations licensed to operate in the United States.

Wind turbines can interfere with microwave paths by physically blocking the line-of-sight between two microwave transmitters. Additionally, wind turbines have the potential to cause blockage and reflections ("ghosting") to television reception. Blockage is caused by the physical presence of the turbines between the television station and the reception points. Ghosting is caused by multipath interference that occurs when a broadcast signal reflects off of a large reflective object—in this case a wind turbine—and arrives at a television receiver delayed in time from the signal that arrives via direct path.

Many states and other jurisdictions recognize the need for regulations addressing interference to radio signal transmissions from the wind turbine installations. Specifically, local planning authorities typically require project developers to ensure wind turbines will not cause interference. In some cases they require developers to notify the telecommunication operators in the area of the proposed wind turbine installation. Other factors prompting developers to undertake proactive investigation into potential interference include the need to prevent legal and regulatory problems and the desire to promote goodwill within the community—a good neighbor approach.

Comsearch has developed and maintains comprehensive technical databases containing information on licensed microwave networks throughout the United States. Microwave bands that may be affected by the installation of wind turbine facilities operate over a wide frequency range (900 MHz – 23 GHz). These systems are the telecommunication backbone of the country, providing long-distance and local telephone service, backhaul for cellular and personal communication service, data interconnects for mainframe computers and the Internet, network controls for utilities and railroads, and various video services.

This report focuses on the potential impact of wind turbines on licensed non-federal government microwave systems. Comsearch provides additional wind energy services, a description of which is available upon request.

2. Summary of Results

An overall summary of results appears below.

Project Information

Name: Mohave County Wind Farm
County: Mohave
State: Arizona

Total Microwave Paths	Paths with Obstructions	Total Turbines	Turbine Obstructions
13	N/A	N/A	N/A

Methodology

Our obstruction analysis was performed using Comsearch's proprietary microwave database, which contains all non-government licensed paths from 0.9 - 23 GHz[1]. First, we determined all microwave paths that intersect the area of interest[2]. The area of interest was defined by the client and encompasses the planned turbine locations. Next, for each microwave path that intersected the project area, we calculated a Worst Case Fresnel Zone (WCFZ). The mid-point of a full microwave path is the location where the widest (or worst case) Fresnel zone occurs. Fresnel zones were calculated for each path using the following formula.

$$Rn \cong 17.3\sqrt{\frac{n}{F_{GHz}}\left(\frac{d_1 d_2}{d_1 + d_2}\right)}$$

Where,

R_n = Fresnel Zone radius at a specific point in the microwave path, meters
n = Fresnel Zone number, 1
F_{GHz} = Frequency of microwave system, GHz
d_1 = Distance from antenna 1 to a specific point in the microwave path, kilometers
d_2 = Distance from antenna 2 to a specific point in the microwave path, kilometers

For worst case Fresnel zone calculations, $d_1 = d_2$

---

[1] Please note that this analysis does not include unlicensed microwave paths or federal government paths that are not registered with the FCC.

[2] We use FCC-licensed coordinates to determine which paths intersect the area of interest. It is possible that as-built coordinates may differ slightly from those on the FCC license.

The calculated WCFZ radius, giving the linear path an area or swath, buffers each microwave path in the project area. See the Tables and Figures section for a summary of paths and WCFZ distances. In general, this is the two-dimensional area where the planned wind turbines should be avoided, if possible. A depiction of the WCFZ can be found in the Tables and Figures section, and is also included on the enclosed spreadsheet and shapefiles[3,4].

Discussion of Potential Obstructions

For this project, turbine locations were not provided; thus we could not determine if any potential obstructions exist between the planned wind turbines and the incumbent microwave paths. If the latitude and longitude values for turbine locations are provided, Comsearch can identify where a potential conflict might exist.

---

[3] The ESRI® shapefiles enclosed are in NAD 83 UTM Zone 11 projected coordinate system.

[4] Comsearch makes no warranty as to the accuracy of the data included in this report beyond the date of the report. The data provided in this report is governed by Comsearch's data license notification and agreement located at http://www.comsearch.com/files/data_license.pdf.

3. Tables and Figures

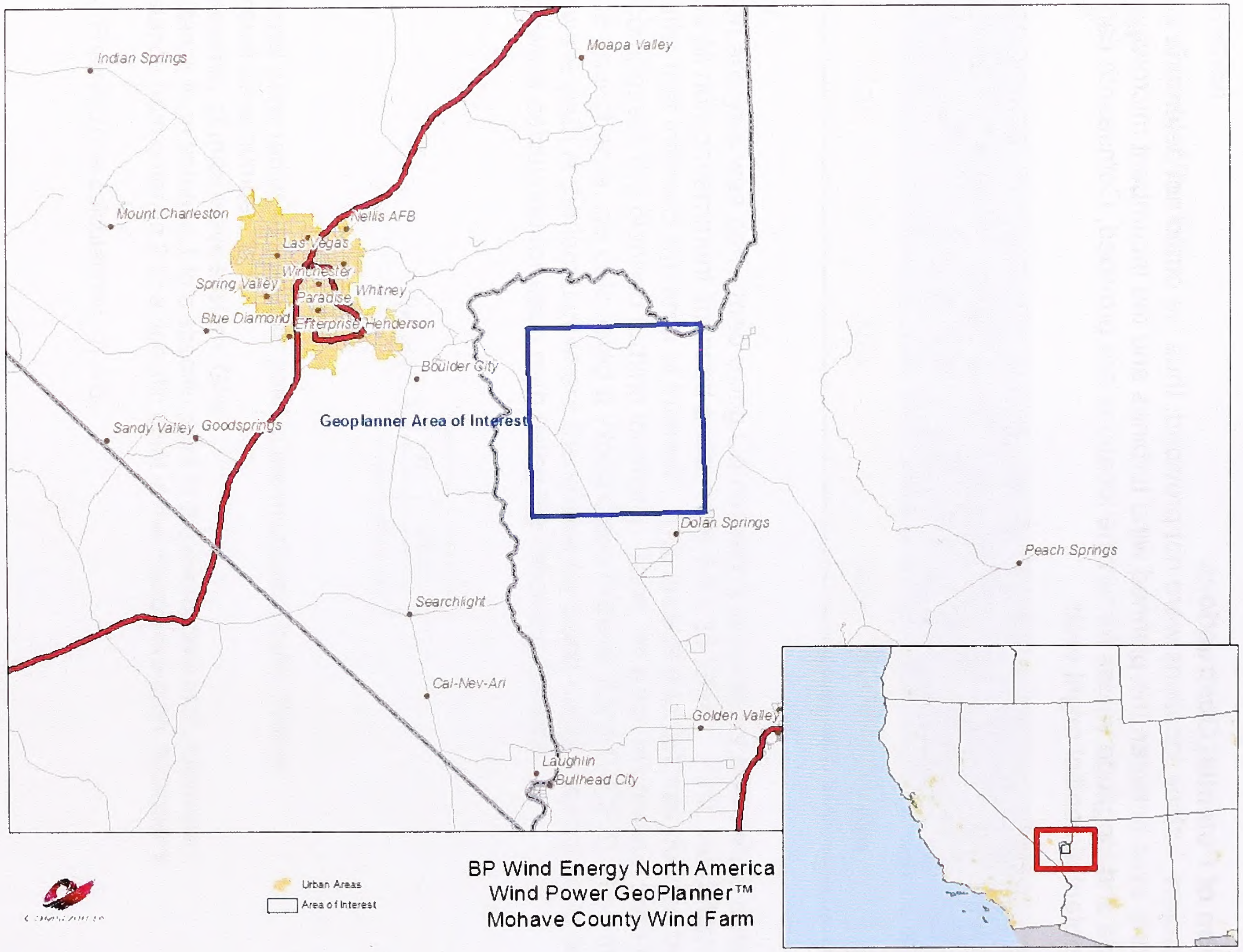


Figure 1: Area of Interest

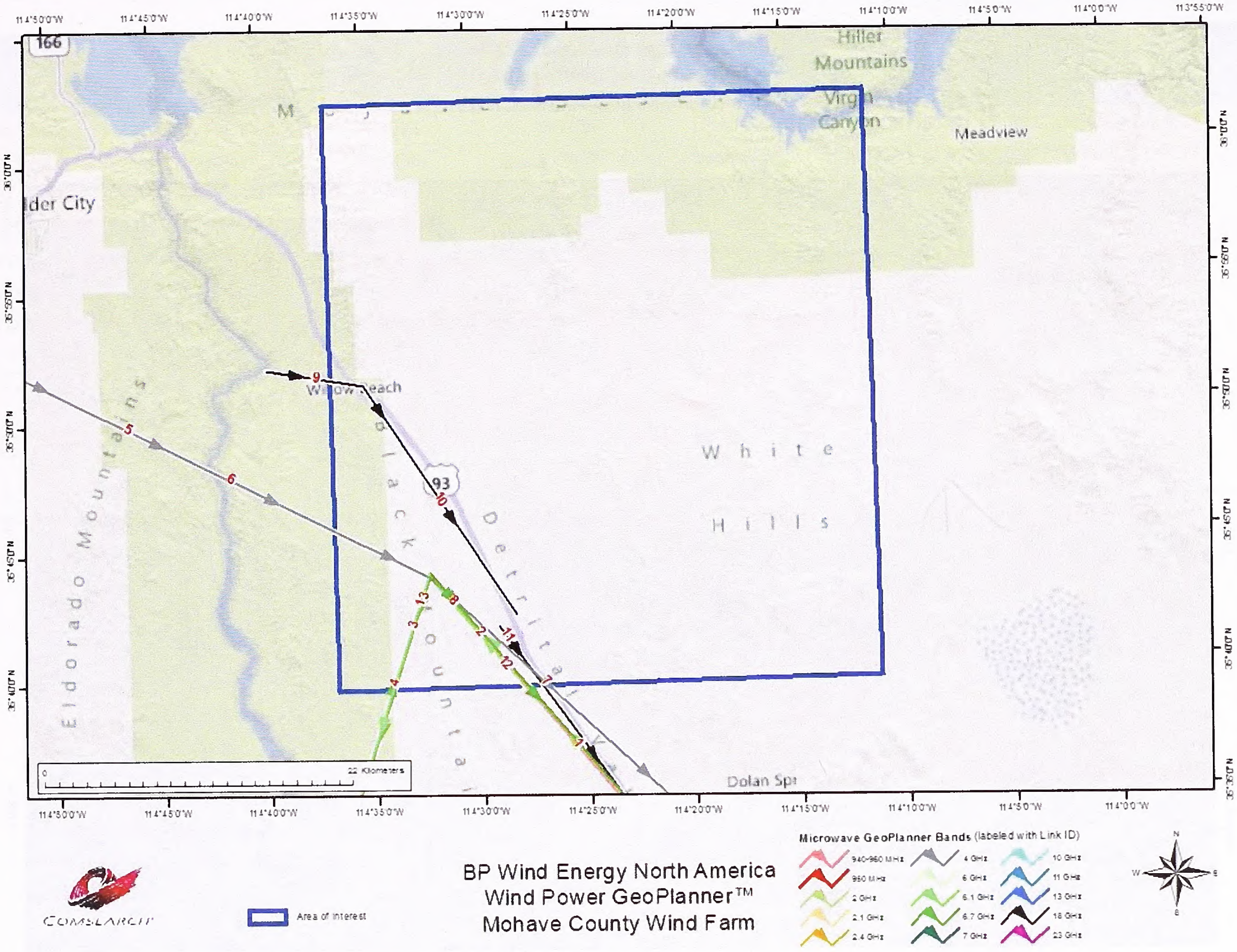


Figure 2: Microwave Paths that Intersect the Area of Interest

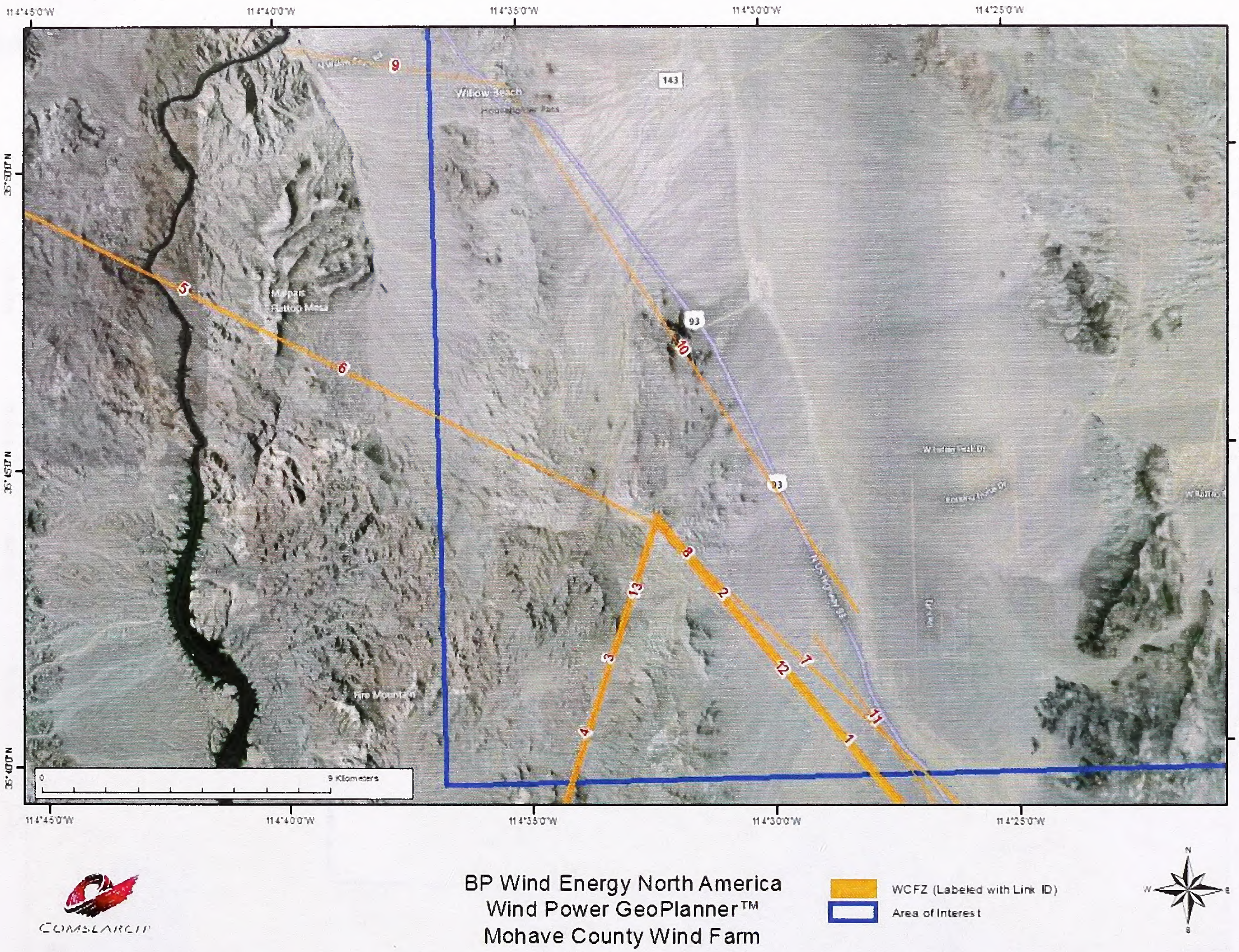


Figure 3: Microwave Paths with WCFZ Buffers

ID	Site Name 1	Site Name 2	Callsign 1	Callsign 2	Band	Licensee	WCFZ (m)
1*	HUALAPAI MTN	WILLOW BEACH	KCW23	KHM36	Lower 6 GHz	ARIZONA, STATE OF DEPT OF PUBLIC SAFETY	33.27
2	WILLOW BEACH	HUALAPAI	KHM36	KCW23	Upper 6 GHz	ARIZONA, STATE OF DEPT OF PUBLIC SAFETY	31.94
3*	WILLOW BEACH	CHRISTMAS TR	KHM36	WAH714	Lower 6 GHz	ARIZONA, STATE OF DEPT OF PUBLIC SAFETY	26.22
4	CHRISTMAS TR	WILLOW BEACH	WAH714	KHM36	Upper 6 GHz	ARIZONA, STATE OF DEPT OF PUBLIC SAFETY	25.17
5, 6	LAS VEGAS JC	WILLOW BEACH	WLB203	WLB236	4 GHz	CNG Communications, Inc.	31.19
7	WILLOW BEACH	CHLORIDE	WLB236	WLB235	4 GHz	CNG Communications, Inc.	30.27
8	WILLOW BEAC	HAYDEN PEAK	WPNI527	WPNI524	940-960 MHz	UNS Electric, Inc.	85.36
9	WILLOW BEAC	MIDDLE HUMP	WPOT288	WPOT289	18 GHz	Citizens Utilities Rural Company, Inc.	5.26
10	MIDDLE HUMP	GARDEN ROAD	WPOT289	WPOT290	18 GHz	Citizens Utilities Rural Company, Inc.	8.87
11	WHITE HILLS	BEE DRIVE	WPOT291	WPOT292	18 GHz	Citizens Utilities Rural Company, Inc.	9.52
12	KINGMAN JCT	WILLOW BEACH	WPTG764	WLB236	Lower 6 GHz	CNG Communications, Inc.	33.23
13	WILLOW BEACH	XMAS TREE	WQGI426	WQGI397	Upper 6 GHz	Sparkplug Southwest, LLC	25.15

* Status is "Proposed" and the path may not be fully constructed.

Table 1: Microwave Paths that Intersect the Area of Interest

(See enclosed mw_geopl.xls for more information and GP_dict_matrix_description.xls for detailed field descriptions)

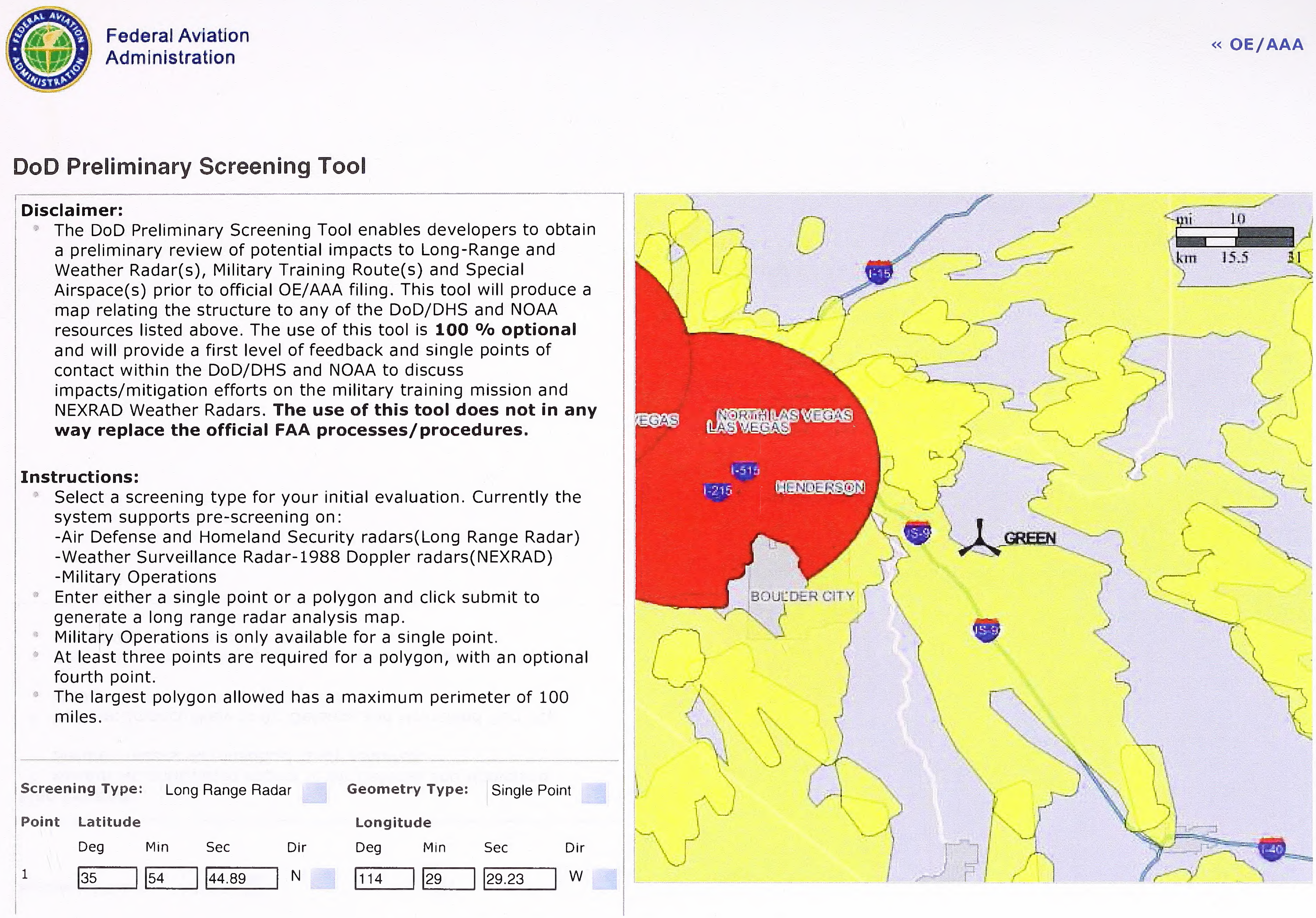
4. Contact Us

For questions or information regarding the Licensed Microwave Report, contact:

Contact person:	Denise Finney
Title:	Account Manager
Company:	Comsearch
Address:	19700 Janelia Farm Blvd., Ashburn, VA 20147
Telephone:	703-726-5650
Fax:	703-726-5595
Email:	dfinney@comsearch.com
Web site:	www.comsearch.com

APPENDIX F

DEPARTMENT OF DEFENSE PRELIMINARY SCREENING TOOL



DoD Preliminary Screening Tool

Disclaimer:

- The DoD Preliminary Screening Tool enables developers to obtain a preliminary review of potential impacts to Long-Range and Weather Radar(s), Military Training Route(s) and Special Airspace(s) prior to official OE/AAA filing. This tool will produce a map relating the structure to any of the DoD/DHS and NOAA resources listed above. The use of this tool is **100 % optional** and will provide a first level of feedback and single points of contact within the DoD/DHS and NOAA to discuss impacts/mitigation efforts on the military training mission and NEXRAD Weather Radars. **The use of this tool does not in any way replace the official FAA processes/procedures.**

Instructions:

- Select a screening type for your initial evaluation. Currently the system supports pre-screening on:
  -Air Defense and Homeland Security radars(Long Range Radar)
  -Weather Surveillance Radar-1988 Doppler radars(NEXRAD)
  -Military Operations
- Enter either a single point or a polygon and click submit to generate a long range radar analysis map.
- Military Operations is only available for a single point.
- At least three points are required for a polygon, with an optional fourth point.
- The largest polygon allowed has a maximum perimeter of 100 miles.

Screening Type: Long Range Radar **Geometry Type:** Single Point

Point	**Latitude**				**Longitude**			
	Deg	Min	Sec	Dir	Deg	Min	Sec	Dir
1	35	54	44.89	N	114	29	29.23	W

Horizontal Datum: NAD83

Map Legend:

- **Green:** No anticipated impact to Air Defense and Homeland Security radars. Aeronautical study required.
- **Yellow:** Impact likely to Air Defense and Homeland Security radars. Aeronautical study required.
- **Red:** Impact highly likely to Air Defense and Homeland Security radars. Aeronautical study required.

DoD Preliminary Screening Tool

Disclaimer:

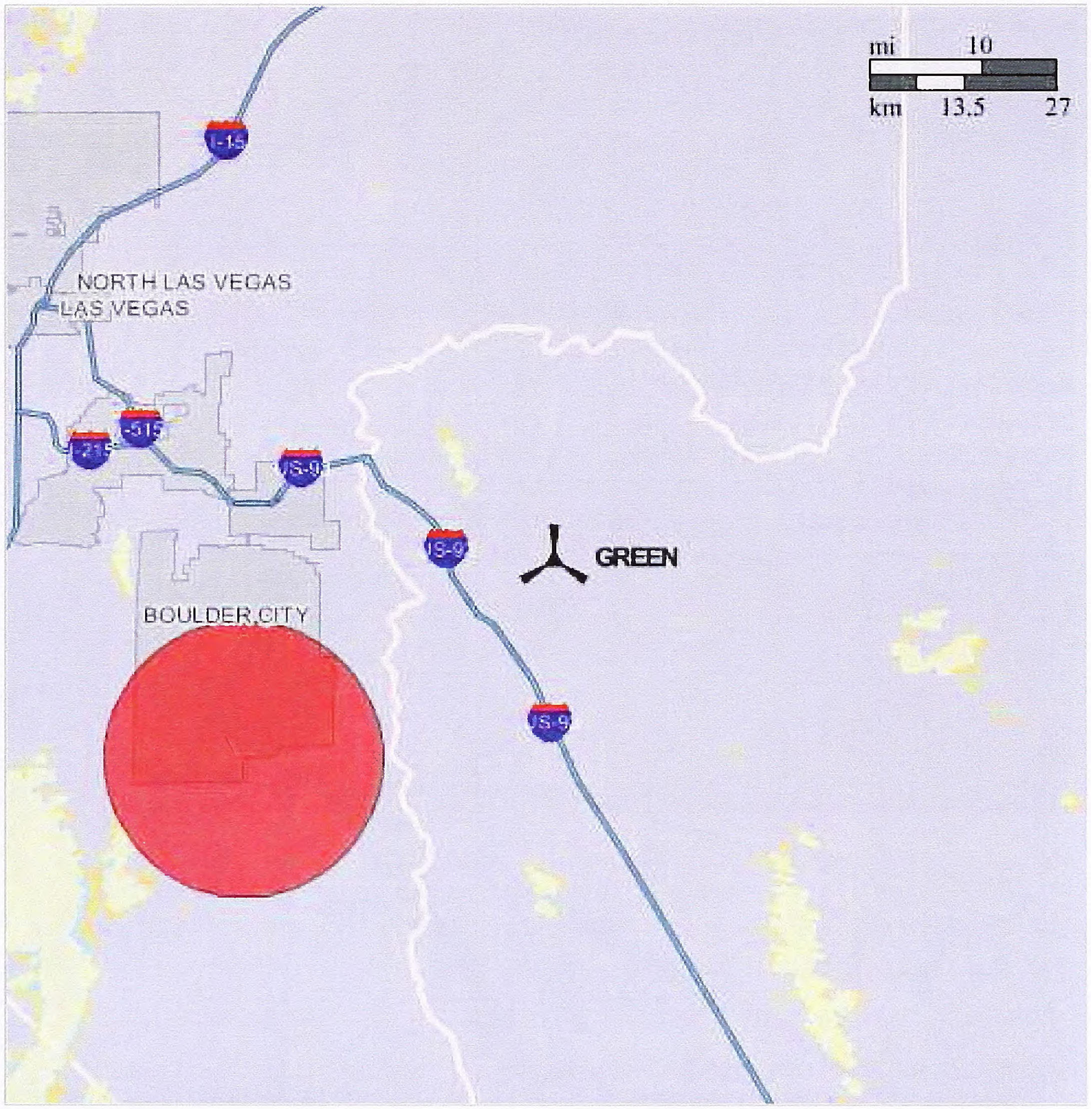
- The DoD Preliminary Screening Tool enables developers to obtain a preliminary review of potential impacts to Long-Range and Weather Radar(s), Military Training Route(s) and Special Airspace(s) prior to official OE/AAA filing. This tool will produce a map relating the structure to any of the DoD/DHS and NOAA resources listed above. The use of this tool is **100 % optional** and will provide a first level of feedback and single points of contact within the DoD/DHS and NOAA to discuss impacts/mitigation efforts on the military training mission and NEXRAD Weather Radars. **The use of this tool does not in any way replace the official FAA processes/procedures.**

Instructions:

- Select a screening type for your initial evaluation. Currently the system supports pre-screening on:
  -Air Defense and Homeland Security radars(Long Range Radar)
  -Weather Surveillance Radar-1988 Doppler radars(NEXRAD)
  -Military Operations
- Enter either a single point or a polygon and click submit to generate a long range radar analysis map.
- Military Operations is only available for a single point.
- At least three points are required for a polygon, with an optional fourth point.
- The largest polygon allowed has a maximum perimeter of 100 miles.

Screening Type: NEXRAD **Geometry Type:** Single Point

Point	**Latitude**				**Longitude**			
	Deg	Min	Sec	Dir	Deg	Min	Sec	Dir
1	35	54	44.89	N	114	29	29.23	W



Horizontal Datum: NAD83

Map Legend:

- **Green:** Minimal to no impact to Weather Surveillance Radar-1988 Doppler (WSR-88D) weather radar operations. National Telecommunications & Information Administration (NTIA) notification advised.
- **Yellow:** RLOS Coverage At or Below 130m AGL. Impact likely to WSR-88D weather radar operations. Turbines likely in radar line of sight. Impact study required. NTIA notification advised.
- **Blue:** RLOS Coverage At or Below 160m AGL. Impact likely to WSR-88D weather radar operations. Turbines likely in radar line of sight. Impact study required. NTIA notification advised.
- **Gold:** RLOS Coverage At or Below 200m AGL. Impact likely to WSR-88D weather radar operations. Turbines likely in radar line of sight. Impact study required. NTIA notification advised.
- **Red:** Impact highly likely to WSR-88D weather radar operations and wind turbine electronics. Turbines likely in radar line of sight. Aeronautical study required. NTIA notification strongly advised.

For more information, or to discuss the screening results, please contact NOAA at wind.energy.matters@noaa.gov

Federal Aviation
Administration

« OE/AAA

DoD Preliminary Screening Tool

Disclaimer:

- The DoD Preliminary Screening Tool enables developers to obtain a preliminary review of potential impacts to Long-Range and Weather Radar(s), Military Training Route(s) and Special Airspace(s) prior to official OE/AAA filing. This tool will produce a map relating the structure to any of the DoD/DHS and NOAA resources listed above. The use of this tool is **100 % optional** and will provide a first level of feedback and single points of contact within the DoD/DHS and NOAA to discuss impacts/mitigation efforts on the military training mission and NEXRAD Weather Radars. **The use of this tool does not in any way replace the official FAA processes/procedures.**

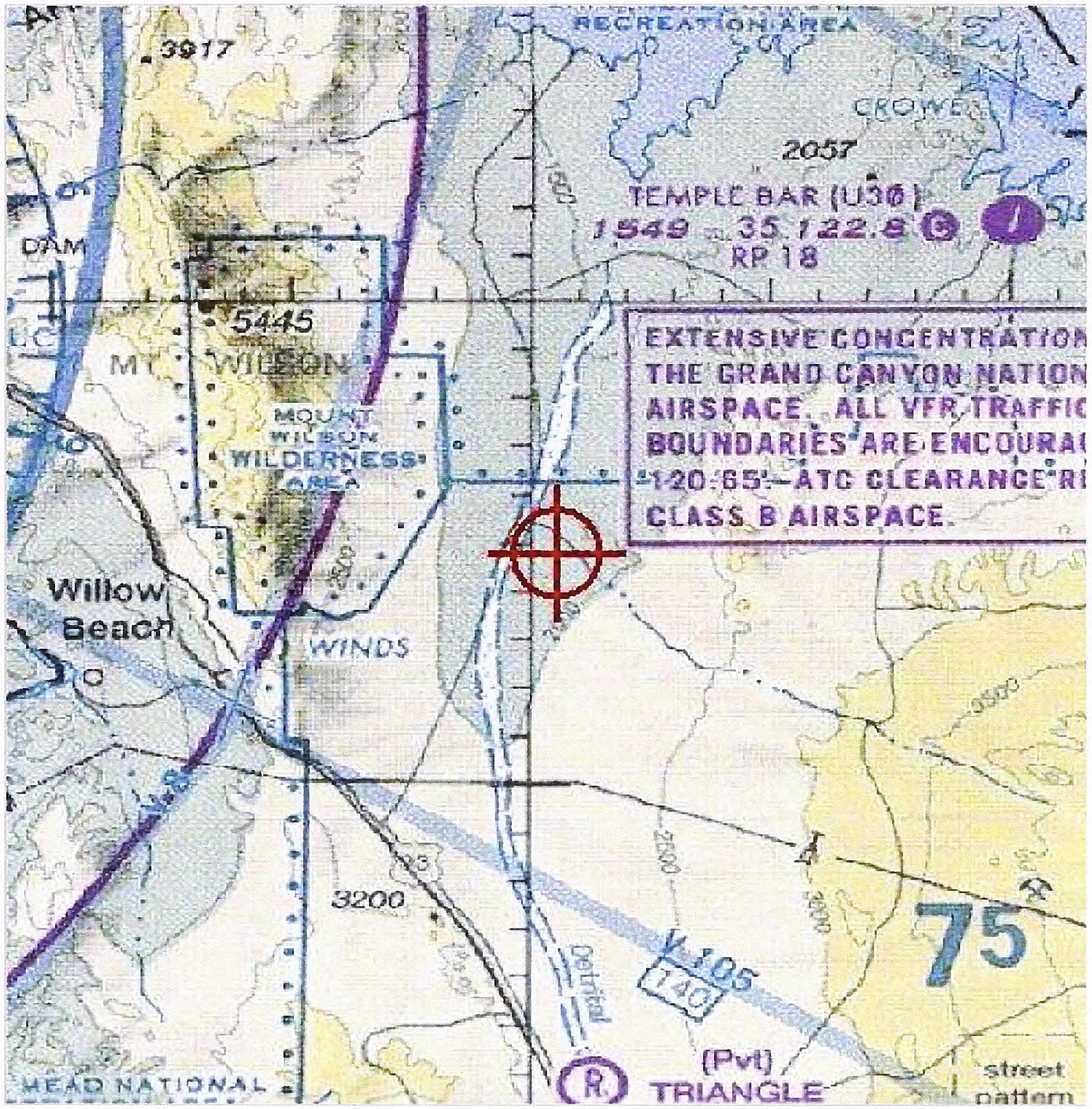
Instructions:

- Select a screening type for your initial evaluation. Currently the system supports pre-screening on:
  -Air Defense and Homeland Security radars(Long Range Radar)
  -Weather Surveillance Radar-1988 Doppler radars(NEXRAD)
  -Military Operations
- Enter either a single point or a polygon and click submit to generate a long range radar analysis map.
- Military Operations is only available for a single point.
- At least three points are required for a polygon, with an optional fourth point.
- The largest polygon allowed has a maximum perimeter of 100 miles.

Screening Type: Military Operations

Geometry Type: Single Point

Point	**Latitude**				**Longitude**			
	Deg	Min	Sec	Dir	Deg	Min	Sec	Dir
1	35	54	44.89	N	114	29	29.23	W



Horizontal Datum: NAD83

The preliminary review of your proposal does not return any likely impacts to military airspace. Please contact Gary Munsterman at the USAF Regional Enviromental Coordinator at (415)977-8884 for confirmation and documentation.

The preliminary review of your proposal does not return any likely impacts to military airspace. Please contact Anthony M. Parisi, PE at the USN Regional Enviromental Coordinator at (805)989-9209 for confirmation and documentation.

The preliminary review of your proposal does not return any likely impacts to military airspace. Please contact LTC Owen B. Castlemain at the USA Regional Enviromental Coordinator at (817)222-5920/5921 for confirmation and documentation.

The preliminary review of your proposal does not return any likely impacts to military airspace. Please contact Mr. Pat Christman at the USMC Regional Enviromental Coordinator at (760)725-2674 for confirmation and documentation.

This is a preliminary review of your proposal and does not preclude official FAA processes.
Your search data is not retained and the privacy of all your searches is assured.

Any questions interpreting the map, please email Steve Sample with your question/s and phone number at steven.sample@pentagon.af.mil

Cooperating Agencies

Bureau of Reclamation • Western Area Power Administration • National Park Service
Arizona Game and Fish Department • Hualapai Tribe • Mohave County